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# Types of fears reported by immigrant Pontian Greeks from the former Soviet Union and by native Greeks

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## ABSTRACT

The study examined levels of self-reported fears in two groups sharing a Greek cultural heritage, i.e., native Greeks and Pontian Greeks who had made their way to Greece since *perestroika*, to determine whether the group emigrating into Greece was more vulnerable than the native born Greeks to specific fears or types of fears. Pontian immigrants and native Greek adults matched for age, sex and site of residence were compared in their responses to a modified version of the FSS-III (Fear Survey Schedule). The fear items were subdivided for analysis into two dimensional categories of fear types: social and non-social. The Pontian group showed a higher level of self-reported fear overall. The difference was most marked for non-social fears (FSS-III), while for social fears there was no significant difference. The effect of group on fears was further moderated by the site of residence. In both groups, the usual finding, namely that women express more fears than men, was replicated. Spontaneously reported fears were also elicited and analysed. Pontians reported more social failure, harmful animal, natural phenomena, and supernatural fears but natives reported more social rejection fears. Over several measures, Pontians were found to experience greater intensities of fear on various fear types (harmful animal, social failure, natural phenomena, supernatural fears and tissue damage), while natives were higher in social rejection fears only. The relative importance of pre- and post-immigration and environmental factors is discussed. This study illustrates the validity of examining the content of fears ascribed to dimensional categories as indicators of cultural distress. It also shows the value of supplementing a standard questionnaire measure by the method of eliciting spontaneously reported fears.

*Key words:* Cultural effects, Fears, Immigration.

## INTRODUCTION

Since the early 1990s, over 50% of the

Pontian<sup>1</sup> Greeks, about a million and a half people, have migrated from the former Soviet Union, while the majority of those who stayed

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behind themselves contemplated and planned migration (Mirsky, 1997). The Pontian Greeks, being a part of this mass movement, may have experienced disruption of their lives with accompanying anxiety or distress even prior to their actual immigration to Greece. Psychological reactions arising in the period of adaptation to stressful life events are expressed in a variety of psychological symptoms such as anxiety and depression (Krupinski, 1975; Malzberg, 1955; Stopes-Roe & Cochrane, 1990; Rack, 1982). General fearfulness may also be seen as a measure of psychological adjustment. In addition, the content of fears, considered for either their individual content or grouped by type, could indicate which aspects of the environment may have interfered with psychological adaptation.

Fears may be differentiated from phobias as being not necessarily abnormal, and from anxiety as being of specific content. This differentiation enables us to consider the particular effects of fears on behaviour, emotion and cognition. As to the etiology of fears, "preparedness theory" (Seligman, 1971), learning theories (Rachman, 1977), and cognitive factors (Lazarus, 1982, 1984) all identify a number of themes, some that are specific to one model, and others that cut across a number of models. To overcome the problem posed by a lack of known traumatic conditioning history in some cases, Rachman (1977) proposed a model in which phobias are viewed as being acquired via one or more of three pathways: (1) direct conditioning, (2) indirect experience of trauma or vicarious exposure, (3) transmission of information. Each of these pathways represents one of two

methods of acquisition, direct or indirect conditioning.

However, Rachman's model does not consider the possible role of more prolonged life experiences such as parenting, cultural traditions or migration on specific fears, groups of fears or overall fearfulness. The authors' contention is that a comprehensive theory of fears ought to integrate multiple ideas and constructs that concern the inner experiences of the fearful person and his or her transactions with the environment. Moreover, such a theory should also offer an account of both the historical origin of fears and their future course.

This study aims at examining self-reported fears in a group that, while sharing much of the cultural heritage of native Greeks, had also experienced a continuing and stressful life change, that of immigration. Immigration itself might be expected to influence adversely the content and intensity of their fears, given that there is enough evidence that immigration is a stressful event (see, for example Stopes-Roe & Cochrane, 1990). On the other hand, the shared Greek cultural tradition might be expected to protect against the stress of immigration.

Two methods for the assessment of fears have usually been used in various studies: the first consists of unstructured written self-reports in which children and adults describe the objects, situations, persons or events that cause them fear (Hall, 1897; Means, 1936). The second consists of structured self-reports that identify the factors associated with fears and measure their intensity through the use of psychometric objective measures such as rating scales and questionnaires.

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1. The Pontians are a group of Greek origin, which may be traced back to the 8th century B.C. and historically they constitute one of the most ancient Greek settlements along the Black Sea coast (Efxinos Pontos), after which they are named. Despite many vicissitudes, environmental in the early days and political later, they have maintained their cultural values. The Greek language has evolved into local dialects, which are still spoken by many, although, in the countries of the former Soviet Union, they speak additionally or only Russian. Following *perestroika* many of them arrived in Greece and were welcomed 'back' as Greeks.

The three most commonly used structured fear questionnaires are the Lang and Lazovik (1963) Fear Survey Schedule I, or FSS-I; the Geer (1965), FSS-II; and the Wolpe and Lang (1964) FSS-III. These schedules have 50, 51, and 75 items respectively. Most studies based on FSS-II or III have used item analysis and dimensional analysis. Pickersgill (1995), in her review of the methodologies employed in the study of self-reported fears, noted the advantages and disadvantages of both types of analyses. She pointed out that the benefits of item analysis include its ability to identify potential phobias, quantification of responses, allowing for comparability between samples and for the assessment of change, and the possibility of group comparisons either on individual items or on overall mean scores. However, she concluded that the selection of items had commonly been based on clinical problems in a particular cultural setting and that therefore items may be out of date and culturally inappropriate in another setting. With respect to dimensional analysis, the same author noted that significant interactions could be identified and that fear type dimensions may be correlated with other dimensions.

Arrindell, Pickersgill, Merckelbach, Ardon, and Cornet (1991) carried out an extensive review of 38 factor analytic studies that had used the FSS on samples in 12 different countries. Seven studies used community subjects, either alone or in combination with students; 16 studies collected data from psychiatric patients or phobic club members, while the majority relied solely on student responses. The review found that slightly over 90% of all fear dimensions surveyed fell into one of four types: (1) *interpersonal events or situations*, (2) *death, injuries, illness, blood and surgical procedures*, (3) *animals*, and (4) *agoraphobia*.

Most studies have depended on the English version of the FSS-III questionnaire. In order to study cultural groups for whom English is not the natural language, reliable translations of the measuring instruments must first be produced. A

further consideration is that of ensuring more complete sampling of all the fears of importance to the subjects. To accomplish this, each subject should also be asked to report all the items of which he or she is personally afraid, the so-called spontaneous report method.

In the present study, a combination of the methods described above has been used. The Fear Survey Schedule (III) was employed, and additionally, spontaneously reported fears were collected, with the aim of identifying those fears specific to Greek and Pontian cultures.

For the investigation of these issues, an immigrant population, the Pontian Greeks, was chosen for the following reasons: No previous study has investigated the types, intensities and nature of fears, or the effects of sex and of the type of site of residence, whether urban or semi-urban, on the occurrence of fears in immigrant groups. The Pontian Greeks share with the native Greeks a cultural and linguistic tradition, although they have been subject also to other cultural influences. Although exposure to Soviet culture remains an uncontrolled variable, a comparison of the two groups would allow an assessment of the nature and intensity of fears in immigrant as opposed to non-immigrant adults, with possible implications for the development of appropriate psychosocial interventions and strategies.

Within this framework, the aims of the present study were as follows: (1) to compare in native and Pontian Greeks the intensity levels of self-reported fears of different types as measured by the FSS-III and the Spontaneous Fear Form, constructed for the purpose of the present study in the languages of the immigrant and non-immigrant groups, with the expectation that both social and non-social fears would be raised in the Pontian group and, (2) to compare the performance of men and women, and of urban and semi-urban residents, within and between the immigrant and non-immigrant groups. Given that traditional Greek culture tends to emphasize differential sex role stereotypes, it was expected

that in both groups there would be more fear expressed by females than by males, and, possibly, relatively more so in the Pontian group, where there would have been less opportunity for modernising influences, both pre- and post-immigration. Data were collected from two sites, urban and semi-urban, as a safeguard against the results being site-specific. However, it was thought that the pressures of urban life might be more likely than those of a semi-urban environment to loosen family ties and disrupt the group cultural values traditional in Greek culture and which the Pontians had brought back with them. There would therefore be more fears in the urban setting. On the assumption that the Pontians would be more dependent for their stability than the native Greeks on preserved traditional roles, an interaction between group and site of residence would result. With respect to both sex and site of residence, therefore, significant interactions with group were expected.

## Method

### Participants

Two samples were recruited for this study. The first group, the Pontian Greeks, consisted of 101 adults (51 males and 50 females) who were recruited from the municipality of Evosmos in Thessaloniki (urban site residence) and the reception village of Sappes near Komotini (semi-urban site residence)<sup>2</sup>. The two Pontian samples

were randomly selected with the help of a Pontian association (Panayia Soumela<sup>3</sup>), and the Institute of Greek repatriates in Komotini. The lists provided contained only Pontians who had come to Greece from the former Soviet Union after 1990. The criteria of selection for the Pontian Greek sample were: (1) person at least 18 years of age, (2) no more than two persons of the same household should participate in the study, (3) if two were selected from the same household, one should be a male and the other female, (4) both parents were Pontians and spoke the Pontian dialect, and (5) the first developmental years were spent in a Pontian environment.

The mean age of this group was 36.4 years, the range 18 to 73 years, and the *SD* = 11.65 years.

For the native Greek group, 103 individuals (53 males and 50 females) were also recruited from Evosmos and Sappes. The two native Greek samples were randomly selected with the help of the municipality of Evosmos and the Association of Greeks from Constantinople and Imvros in Komotini providing lists with names, telephones and addresses. The method used to select the native sample was the same as that for the Pontian sample. Prospective participants were telephoned, the purpose of the study was explained and cooperation was sought; a home visit was then arranged. The selection criteria were that both parents spoke Greek and neither parent was Pontian. The mean age of this group was 32.7 years, the range 19 to 63 years and the *SD* = 9.51 years.

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2. Differences between the two selected sites in the present study must be noted. While Thessaloniki is a major urban metropolitan centre with more than 2,000,000 people and large industrial areas, Komotini is not the most representative area of rural Greece. Although in Komotini there are some industrial areas and a university, most of the areas in this county are rural, including Sappes. However, in Greece this location is not characterized as a pure rural but as a semi-urban site. Therefore, in the present study the distinction between urban and semi-urban site of residence will be used.
  3. "Panayia Soumela" is one of the many Pontian associations in Greece and one of the biggest in Thessaloniki. This association maps the areas where Pontians have concentrated both in urban and rural areas. In addition, it provides help to the Pontian immigrants (materials, support, social services, etc).

## Measures

**The Fear Survey Schedule-III (FSS-III; Wolpe & Lang, 1964).** This measure yields scores on seven factorially-derived dimensions, namely social rejection, agoraphobia (travel), agoraphobia (heights), tissue damage (e.g., injuries, blood, death), aggression, sex and dirt, and harmless animal fears. This seven factor solution was based on the factor analytic study of 500 British university students (Pickersgill & Lynch, personal communication) and was chosen because it provided the most informative solution which was also largely in agreement with the four previous categories accepted as universal by Arrindell et al. (1991). Briefly, it is a self-report questionnaire of 64 items. Responses are scored on a 1 to 5 Likert scale, with higher mean scores indicating more intensive fear.

**The Spontaneous Fear Form.** An open-ended measure of spontaneous fears in waking life, with fear intensity assessed on a percentage (0-100%) scale. All measures were translated into the Greek and Russian languages, using the back-translation method. Pontian subjects were offered the choice of answering in the Greek or the Russian language. Most chose to be tested in Russian. If necessary, the tests were administered orally by a translator fluent in both languages.

## Preliminary analysis of data

**Fear type allocation (FSS-III).** Factor analysis using principal components extraction method, followed by varimax rotation was performed separately on the responses of the natives ( $N = 103$ ) and of the Pontians ( $N = 101$ ) samples to the 64 items of the FSS-III. The final factors met the following criteria: (a) each was based on factors with an eigenvalue  $> 1.0$ , (b) each item included had no significant correlation with another factor, and (c) only items with a communality of  $> .50$  were selected. Seven factors emerged that met these criteria, accounting for 60.6% of the variance for the natives sample, and 53.1% for the Pontians. However, results show that there are different factor structures in the two groups. This might be due to the small ratio of items to participants. Thus, the attempt to replicate previous findings failed, as neither the 5, nor the 7 factor solutions (Pickersgill & Lynch, personal communication) agree between the native and Pontian Greek groups.

For this reason, it was decided to divide the 64 items of the FSS-III into two social and two non-social subscales and to factor analyze them, separately for each group. It should be noted that the condensing of the non-social items into two scales and the condensing of the social items

**Table 1**  
Rotated factors emerging from principal components analysis of the FSS-III in the native ( $N = 103$ ) and Pontian Greek ( $N = 101$ ) samples

Fear factor items	Natives		Pontians			
	Communality	Component 1	Component 2	Communality	Component 1	Component 2
Social 1	.83	.67	.61	.95	.35	.91
Social 2	.97	.42	.88	.73	.61	.59
Non-social 1	.95	.87	.42	.90	.80	.50
Non-social 2	.93	.86	.44	.95	.92	.31

into two scales was arbitrary for the sake of doing a factor analysis without violating the assumptions about the ratio of the number of variables to the number of subjects. The assignment of the items to subscales and their loadings are given in Appendix A separately for the native and Pontian groups.

The varimax rotated 2-factor principal components solution derived from self-ratings of 204 subjects was used as the criterion template. The two factors with eigenvalues above 1, accounted for 92.42% and 88.68% of the total item variance respectively for the native and Pontian groups. The first factor (non-social) accounted for 53.66% and 50.14% of the total variance respectively for the native and Pontian groups. The second factor (social) accounted for 38.75% and 38.54% of the total variance respectively for the native and Pontian groups. Table 1 presents a summary of the two rotated factors separately for each group.

As observed from Table 1, the communalities of the fear factors were large in both groups, and it seemed as there is a main fear factor of general fear which is modulated by social and non-social fear. In both groups non-social fear emerged as the first component and social the second.

**Fear type allocation of the spontaneously reported fears.** Inter-rater reliability of the categorization procedure was estimated by the kappa statistic. The kappa statistic in this study describes one of a number of measures of agreement which have been proposed for categorical variables by Scott (1955), Cohen (1960) and Fleiss (1971), all cited in Siegel and Castellan (1988). These measures are all similar, although some are specialized to assess the agreement between only two raters or a single rater evaluating pairs of objects. The choice for the current study is the kappa statistic provided by Siegel and Castellan (1988), which is conceptually similar to earlier measures of agreement and one which allows for an arbitrary number of raters.

In order to analyze the spontaneous fears

reported by the participants, it was necessary to code the reported fear items into fear types. For this purpose  $k = 3$  trained raters assigned  $N = 140$  fear items into  $m = 14$  fear types. The fear types are simply nominal classifications. Each of the raters categorized each fear item independently of both the other fear items and other raters. The categories of fear types were: (1) social rejection, (2) social failure, (3) agoraphobic (uncomfortable situations), (4) agoraphobic (heights), (5) agoraphobic (depths), (6) tissue damage (self), (7) tissue damage (others), (8) tissue damage (natural phenomena), (9) supernatural, (10) sex, (11) dirt and distaste, (12) aggression, (13) harmless animal, (14) harmful animal.

It may be noted that allocation of items was determined by agreement between the raters on conceptual criteria. On occasion, therefore, an item was differently allocated by the raters to a fear type from the allocation of the same item on the FSS-III resulting from the factor analytic loadings.

To find the kappa, as given in Siegel and Castellan (1988), the values of  $P(A)$ , the ratio of the proportion of times that the raters agree and  $P(E)$ , the proportion of times that the raters would expect to agree, were to be combined by using the following equation:

$$K = \frac{P(A) - P(E)}{1 - P(E)}$$

The kappa statistic found for the allocation of fears to types was  $K = 0.68$ , while the  $z$  value was 33.02. This value greatly exceeds one percent point (at which  $z = 2.32$ ). Therefore, we may conclude that the raters exhibited significant agreement in their ratings.

## Results

### Fear type differences between groups (FSS-III)

The main hypotheses with relation to group,

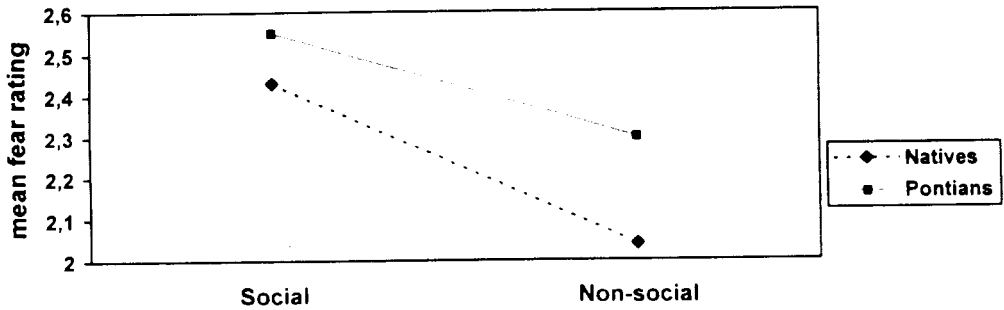


Figure 1  
FSS-III. Mean intensity ratings by fear type and group.

sex, site of residence and fear type were examined in the following analyses. Fear type intensities were obtained for each participant by taking the mean rating given to the fears in each fear type. The means were analysed by mixed model analysis of variance with group, sex and site of residence as between-subject variables and fear type as the within-subject variable.

**Group effect.** The difference between the groups was marginally significant,  $F(1, 196) = 3.75, p > .056$ . The overall mean fear intensity rating for the Pontian group was  $M = 2.43$  and for

the natives was  $M = 2.24$ , indicating that the Pontians overall reported more fear than the native Greeks.

**The fear type effect.** The fear type effect was significant,  $F(1, 196) = 93.77, p < .0001$ , with social fears ( $M = 2.49$ ) rated higher than non-social ( $M = 2.17$ ) in both samples.

**The group by fear type effect.** The interaction, the group by fear type effect, was marginally significant,  $F(1, 196) = 5.28, p < .05$ , showing that the excess fearfulness of the Pontian group varied across fear types.

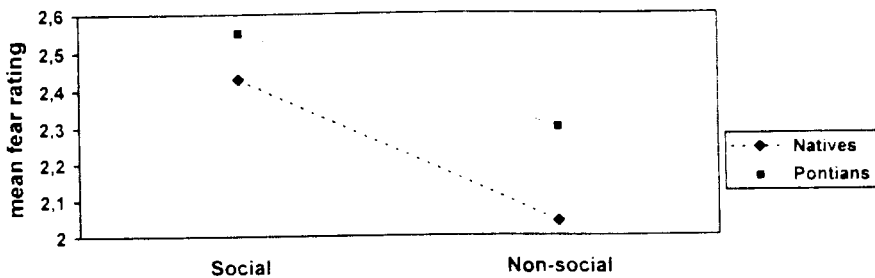


Figure 2  
FSS-III. Mean intensity ratings by fear type group and site of residence.

Key: SUN = semi-urban natives, UN = urban natives, SUP = semi-urban Pontians, UP = urban Pontians



**Table 2**  
**Spontaneous fear type categories: Item content**

Fear category	Items
1. Agoraphobia (depths) (1 item)	deep water
2. Agoraphobia (heights) (1 item)	height
3. Agoraphobia (uncomfortable situations) (14 items)	being in dark, nightmares, speed, houses without roof, enclosed places, dreams, night, underground places, being in a dark place with absolute silence, crossing streets, strange voices, being in a train, being in a car, aeroplanes
4. Animal (harmless) (4 items)	flying insects, cockroaches, frogs, spiders
5. Animal (harmful) (10 items)	dogs, snakes, wolves, tigers, wild animals, foxes, jelly fish, harmful animal, rats, crocodiles
6. Aggression (16 items)	thieves, fights, violence, one person bullying another, criminality, being hunted by others, grandfather, threats, authoritarian people, men that do not care about their appearance, masked people, aggressive people, insane people, people who swear, people who smoke and drink, unknown people
7. Tissue damage (natural phenomena) (6 items)	earthquakes, storms, natural disasters, hurricanes, flood, wind
8. Tissue damage (self) (31 items)	knives, war, accidents, illness, dropping the iron, physical pain, incurable illness, injections, blood, surgeries, car accidents, fire, health problems, shipwrecks, losing tooth, losing hair, doctors, AIDS, nuclear explosion, accident with bicycle, firecrackers, disabilities, eye problems, electric power, death, medications, poisons, starvation, weapons, falling down, dentists
9. Tissue damage (others) (5 items)	death of loved ones, cannibalism, accidents to one's child, leaving the children on their own, death of relatives
10. Tissue damage (supernatural) (6 items)	God, Drakoula, strange beings, ghosts, dead people, future
11. Sexual (1 item)	rape
12. Social (failure) (20 items)	feeling insecure, failure, being criticized, own self, poverty, being disapproved, unfulfilled desires, looking naive, ignorance, being unemployed, making wrong choices, financial problems, being unable to take care of one's family, things I do not know, making mistakes, losing my job, shame, losing my house, not to be buried in family cemetery, future in Greece
Social (rejection) (14 items)	loneliness, losing one's family, lies, being separated from people, rejection, jealousy, getting old, marriage, being nude in public, being dependent on others, gaining weight, gossiping, betrayals, being exiled

Inspection of Figure 1 shows that there was greater difference between the two groups in non-social than social fears, with the Pontian group being higher than the native on both types.

**The sex effect.** The difference between the two sexes proved highly significant,  $F(1, 196) = 52.23, p < .0001$ . The mean fear intensity rating for the females was  $M = 2.68$  and for the males was  $M = 1.99$ , indicating that the females reported considerably more fear overall than males.

**The group by site of residence by fear type effect.** Although there was no difference between site residences, nor was there a group by site residence interaction, the group by site residence by fear type interaction proved marginally significant,  $F(1, 196) = 6.19, p < .05$ . Whereas the difference between the urban natives and the semi-urban natives did not depend on the fear type, in the Pontian group there was a small differentiation between the urban and the semi-urban groups on non-social than on social fears (see Figure 2).

### Spontaneously reported fears: Descriptive analysis

The frequencies of the items in their respective categories of fears over both groups are given in Table 2.

Some groups of items are in categories not, or barely, represented in the FSS-III specifically, Tissue damage (natural phenomena), comprising earthquakes, wind, natural disasters and storms, and Tissue damage (supernatural phenomena) comprising, God, uncertainty, thriller movies and Drakoula. The social failure (feeling insecure, failure, being criticized, oneself failing, poverty, being disapproved of, unfulfilled desires, looking naive, ignorance, being unemployed, making wrong choices, financial problems, being unable to take care of one's family, things I do not know, making mistakes, losing my job, shame, losing my house, not to be

buried in family cemetery, future in Greece) and social rejection (loneliness, losing one's family, lies, being separated from people, rejection, jealousy, getting old, marriage, being nude in public, being dependent on others, gaining weight, gossiping, betrayals, being exiled). Both social failure and social rejection categories are represented in the FSS-III but the category widths are respectively greater in the spontaneous reports. Fears of contemporary relevance that were not items in the FSS-III included motor cyclists, war, fascists, persecution and electrical equipment. No fears culturally specific to the Pontians or native Greeks alone could be distinguished.

### Spontaneously reported fears: Differences between groups

From the data obtained there were two possibilities: (a) one or more fear items were reported or (b) no fear item was reported. When a fear was reported the intensity ranged from 0 to 100%. Five measures were developed from the spontaneously reported fears. All five measures are given in Table 3. What follows are the results for each of the above measures.

**Measure (1): Participants reporting at least one fear within a fear type.** In order to examine the relationship between subjects reporting at least one fear within a fear type (Measure 1) by group (Pontian versus native Greeks), sex (males versus females), and site of residence (urban versus semi-urban), a log-linear analysis, appropriate for multivariate frequency data, was used. Significant group by fear type main effects were found with harmful animal,  $c^2(1, N = 51) = 10.73, p < .005$ , natural phenomena,  $c^2(1, N = 52) = 6.40, p < .05$ , and supernatural fears,  $c^2(1, N = 51) = 34.81, p < .0001$ , Pontians reporting more fears than natives, and also with social rejection fears,  $c^2(1, N = 52) = 9.56, p < .005$ , natives reporting more fear than Pontians.

However, the group effect was moderated by

**Table 3**  
**Measures developed from the spontaneously reported fears**

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Example: For one fear type (e.g., social rejection), given that

(1) The total number (N) of social fears reported within a fear type by all participants is  $N = 5$ , and that

(2) The number of fears reported by a given participant is  $nX$ , and that

(3) The intensities (i) reported by a given participant for whom ( $nX = 3$ ) are: 20, 30, 40, and that

(4) The intensities reported by the given participant for each of the N fears in (1) are: 0, 0, 20, 30, 40, then

Measure 1: whether or not a participant reported any fears within a fear type:  
 this is 0 if  $nX = 0$  and 1 if  $nX > 0$ ,

Measure 2: the proportion of all fears within a fear type reported by a participant:  
 in this example, this is  $nX / N = 3 / 5 = 0.6$ ,

Measure 3: the average intensity of fears reported by a participant within a fear type:  
 in this example, this is  $(20 + 30 + 40) / 3 = 90 / 3 = 30$

Measure 4: the average intensity over all collected fears within a fear type:  
 in this example, this is  $90 / 5 = 18$

Measure 5: the total intensity of fears reported within a fear type:  
 in this example, this is 90

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Note:  $nX$  = number of fears reported,  $X$  = indicator for participant.

sex for social failure fears,  $c^2(1, N = 52) = 8.32$ ,  $p < .005$ , the difference between the responses of the Pontian females (40.0%) and the Pontian males (25.5%) being greater than that between the native males (22.6%) and the native females (14%).

A rather significant group by sex interaction was also found with social rejection fears  $c^2(1, N = 41) = 4.38$ ,  $p < .05$ , the difference between the responses of the native females (30.0%) and the native males (28.3%) being less than that between the Pontian females (20.0%) and the Pontian males (2.0%). A significant interaction of group and site of residence was found for social rejection fears  $c^2(1, N = 41) = 4.96$ ,  $p < .05$ , the difference between the responses of the semi-urban natives (36.5%) and the semi-urban Pontians (8.0%) being greater than that between the urban natives (21.6%) and the urban Pontians (13.7%). A significant group by site of residence interaction was also found for harmful animal fears  $c^2(1, N = 51) = 13.64$ ,  $p < .0005$ , the

difference between the responses of the semi-urban Pontians (56%) and the semi-urban natives (9.6%) being greater than that between the urban natives (17.6%) and the urban Pontians (17.6%). A significant interaction of group and site of residence was found for social failure fears  $c^2(1, N = 52) = 8.33$ ,  $p < .005$ , the difference between the responses of the urban Pontians (51.0%) and the urban natives (23.5%) being greater than that between the semi-urban natives (13.5%) and the semi-urban Pontians (14.0%).

**Measure (2): The proportion of fears reported by a subject within a fear type.** A simple factorial ANOVA model was used to examine the effects of group (natives and Pontians), sex (males and females) and site of residence (urban and semi-urban) on each fear type. The same analysis was used for Measures 3, 4 and 5.

A marginally significant main effect of group was found for natural phenomena fears,  $F(1, 51) = 4.08$ ,  $p < .05$ , Pontians scoring higher than natives, and for supernatural fears,  $F(1, 28) =$

22.49,  $p < .0001$ , natives scoring higher than Pontians.

**Measure (3): The average intensity of fears reported by a subject within a fear type.** A significant main effect of group was found for social failure fears,  $F(1, 51) = 7.28$ ,  $p < .01$ , where the Pontians scored higher than the native Greek group. The analysis of this measure revealed also a significant interaction of group and site of residence for supernatural fears,  $F(1, 51) = 8.47$ ,  $p < .01$ , and for harmful animal fears,  $F(1, 50) = 4.21$ ,  $p < .05$ . For supernatural fears, the difference between the natives (not enough cases) and the Pontians (92.31) for the urban site of residence was greater than for semi-urban site, where the natives' mean was 77.50 and the Pontians' mean was 85.71. For harmful animal fears, the difference between the natives (68.89) and the Pontians (72.78) for the urban site of residence was greater than that for semi-urban site of residence, where the natives' mean was 90.0 and the Pontians' mean was 69.11.

**Measure (4): The average intensity over all fears collected within a fear type.** A significant main effect of group was found for harmful animal fears,  $F(1, 203) = 13.03$ ,  $p < .001$ , the Pontian group scoring significantly higher than the native group, for social failure fears,  $F(1, 203) = 8.57$ ,  $p < .005$ , the Pontians scoring significantly higher than the native group, for social rejection fears,  $F(1, 203) = 6.61$ ,  $p < .05$ , the native group scoring significantly higher than the Pontian group, for natural phenomena fears,  $F(1, 203) = 21.72$ ,  $p < .0001$ , and for tissue damage(self) fears,  $F(1, 203) = 24.61$ ,  $p < .0001$ , where in all fear types the Pontian group scored significantly higher than the native group.

In the analysis of measure (4), significant group comparisons depending on site of residence were found for social failure fears,  $F(1, 203) = 4.18$ ,  $p < .05$ , the semi-urban Pontians scoring rather higher than semi-urban natives, for harmful animal fears,  $F(1, 203) = 8.33$ ,  $p < .005$ , urban Pontians scoring significantly higher than urban native, and for natural phenomena fears,

$F(1, 203) = 5.32$ ,  $p < .05$ , semi-urban Pontians scoring rather higher than semi-urban natives.

**Measure (5): The total intensity of fears reported within a fear type.** A significant main effect of group was found for harmful animal fears,  $F(1, 203) = 13.03$ ,  $p < .0001$ , social failure,  $F(1, 203) = 8.57$ ,  $p < .005$ , natural phenomena,  $F(1, 203) = 21.72$ ,  $p < .0001$ , and supernatural fears,  $F(1, 203) = 24.61$ ,  $p < .0001$ , Pontians scoring significantly higher than natives. A rather significant main effect of group was also found for social rejection fears,  $F(1, 203) = 6.61$ ,  $p < .05$ , natives scoring higher than the Pontians.

## Discussion

### Interaction of group differences with fear types

While there is a marginally significant overall increase in the fear intensity level within the Pontian Greek group, this must be examined with reference to the significant interaction with fear types. On the FSS-III, the difference was more marked for non-social than for social fears. Differences between the two groups may have arisen from differing environmental experiences. The Pontians reported significantly more harmful animal, natural phenomena, supernatural and tissue damage (self) fears than natives. On the face of it, this is surprising as it might be supposed that the fears of any difficulties arising from immigration might be social rather than non-social. However, the analyses of the spontaneously reported fears may cast some light on this result. In the categorization of these fears, a distinction was made between social failure and social rejection, the former being mainly a fear of failure to achieve and the latter a fear of loss of social approbation. While on several measures the Pontians had higher social failure fears, the native Greeks had higher social rejection fears. It could be argued that after immigration the Pontians kept their inter-group

cohesion and had no cause to worry about the social rejection but did have concerns about, e.g., employment and housing and other indicators of social achievement.

The Pontians mainly came from rural areas of the former Soviet Union, where they had probably been more exposed to threatening natural phenomena such as earthquakes or hurricanes, or more often came into contact with harmful animals. In contrast, supernatural fears, such as the fear of God, probably require more cultural explanations associated with religious or other cultural values. Looking at the findings of measure 3 of the spontaneously reported fears, the differentiation between social fears of failure and of rejection proved important, indicating that the Pontians feared social failure much more than the natives did but the native Greeks feared rejection more (measures 1 and 5). This finding indicates that the nature and perceived danger of fears might have different ranges of application in different cultural groups. For the Pontians, social failure fears would probably include post-migratory experiences such as significant threats to present success and adaptation in everyday life and the new environment, but also the loss of previously established roles and possessions. Social rejection fears, which are higher in natives, may be relatively something of a luxury or at least imply a relatively greater emphasis on the nuances of social acceptability.

With the exception of tissue damage (self) fears the categories of fear on which the Pontians tend to score more highly than the native Greeks (harmful animal, natural phenomena and supernatural fears), all refer to fear types not represented in the FSS-III, although they are clearly of significance in governing the degree of confidence and independence with which an individual may approach the world. It may be noted that amongst the fears collected by Hall (1897), natural phenomena fears, in particular of thunder and lightning, were the most common of all with fears of the supernatural (ghosts) occurring quite frequently. Amongst the fear of

college women, reported by Means (1936), the fear of cyclones ranks relatively highly (thirteen over 300 fears) and is checked by 52 per cent of the sample, but supernatural fears are less marked, the highest ranking being fear of the devil (checked by 17 %). Our results support those of Hall and Means and highlight the importance of extending the limited ecological validity of measures based on the fixed pool of items in the FSS-III by allowing participants to identify their own fears.

There are some anomalies in the present results. For example, for supernatural fears, on Measure 1 (whether or not a participant reported any fears within a fear type) Pontians scored higher than native Greeks, whereas on Measure 2 (the proportion of all fears within a fear type reported by a participant), native Greeks scored higher than Pontians. These results would need to be confirmed and further investigated. The general conclusion, however, is that the Pontians were more fearful than the native Greeks on several categories of items. Only on social rejection fears did the native Greeks score more highly on some measures than the Pontians.

### **Sex and site of residence differences**

In line with the general picture to date and in the past (Arrindell, Kolk, Pickersgill, & Hageman, 1993), females were found to be more fearful than their male counterparts on both the two dimensions of the FSS-III and the spontaneous fears. This result was valid across both the Pontian and native groups and the urban and semi-urban sites of residence but there were no interactive effects between site of residence and group.

Among other findings are the observed group differences either by sex, or site of residence interactions with specific spontaneously reported fear types (social failure, social rejection, harmful animal, agoraphobic heights). When looking at the mean intensity

ratings of spontaneous fears (measure 3), semi-urban natives scored marginally higher than urban natives in supernatural and harmful animal fears. These comparisons are consistent with other findings (Ollendick, King, & Yule, 1994), where the site of residence was found to affect the incidence and frequency of fears, and with findings from epidemiological studies (Eaton, Dryman, & Weissman, 1991).

A possible explanation may be found in differences in socioeconomic conditions or in cultural differences. With relation to supernatural fears, greater adherence to cultural values has been reported in semi-urban Greeks compared to urban (Georgas, 1989, 1991), while harmful animals may be more likely to be encountered in semi-urban or rural areas. However, in order to fully understand this finding it should be noted that the current semi-urban Pontian sample was not living under the same conditions as the semi-urban natives. The semi-urban Pontians at the time of the assessment were living in a reception village in Sappes, and most of them had been there for at least three years. Thus, any explanation of the findings should take into account the adverse living conditions of a reception village, together with its location, which was quite rural and isolated. Probably the increased fear levels in the semi-urban Pontians reflect the actual problems in their poor living conditions and may suggest a symbolic basis for the reported fears.

The urban Pontians' site of residence seems to be more protective, which may be because there are more opportunities for employment and leisure than existed in the semi-urban reception village. It is possible that social change in general was experienced most rapidly in urban areas and that this is 'why' the urban natives were more affected than the Pontians. Validation of these proposed explanations would depend on further studies in which specific hypotheses were tested and the site residence variables further analyzed.

## **Conclusion**

Any observed group differences in fear type profiles between the FSS-III and the spontaneous measures, and also differences within the spontaneous measures, could be explained by the different nature and aspects of the fears they examine. Therefore, their merits are not mutually exclusive, but each contributes to the global picture of the individual's fears.

The results illustrate the value of eliciting spontaneously reported fears, in terms both of offering a more comprehensive and contemporary account of the content of fears and also of the greater specificity of fear type categories, leading to a more sensitive account of group differences. However, caution should be employed when using self-reports without other confirming measures of cognition or behaviour. There are still many issues to be addressed. For instance, how do differences in fear type scores express themselves at the behavioural or physiological level? Some fears (e.g., animal or tissue damage) embrace both physiological (such as heart rate) or behavioural (such as avoidance) elements, while others (e.g., social fears) might also include more cognitive elements (such as negative thinking).

In specific situations of change, in future studies on the fears of immigrants or other related groups, it is suggested that spontaneous fears responses should be collected as widely as possible and rated by all the different groups concerned. In the present study Pontian immigrants reported higher levels of social failure fears (spontaneous), whereas for the social rejection fears (FSS-III) there was virtually no difference between the two groups, thus reinforcing the value of the distinction. It is possible, therefore that different vulnerable groups, such as forced or voluntary immigrants, exiles or refugees will have different types of fears that may be related to their specific historical and cultural patterns. Moreover, to discover whether or not fears are of adaptive

importance in situations of change, they should be followed-up in different stages of adaptation in the host country, from crisis to resettlement.

Results show that on the FSS-III measure Pontian Greek participants reported a relatively higher intensity of fears. These findings support previous evidence of high rates of psychological distress among immigrants (Jayasuriya, Sang, & Fielding, 1992). However, since the literature does not indicate an ever-present and universal association between immigration and psychological distress, it is postulated that additional risk factors operate in the case of Pontian Greek immigrants coming from the former Soviet Union. Two such risk factors are suggested: a higher baseline level of psychological distress in their country of origin, and culture specific patterns of emotional experience.

Differences in psychological distress between immigrant and non-immigrant populations may stem from differences between normal distress levels in the society of origin and the society of destination (Murphy, 1977; Rack, 1982). It is therefore important to examine psychological phenomena among immigrants in the light of both cultural relativity and the society from which they have arrived. However, as stated above, in the case of the former Soviet Union such examination is complicated, as Soviet authorities have for many years suppressed epidemiological data from the period preceding "perestroika", so the following interpretation, although plausible, should be treated with caution.

The phase of pre-emigration is stressful regardless of whether it leads to immigration or not, and in the present case it may have been particularly stressful. Although no direct data was collected on the pre-immigration phase of the Pontian respondents, it may be assumed that they were affected by the atmosphere of preoccupation with emigration that prevailed for many years in their community.

Finally, it may be noted that although before immigration the Pontian Greeks had done all in

their power to preserve what they understood to be Greek culture, there was no evidence that this had protected them from the stress of adaptation to the realities of contemporary Greece. Possibly, the traditional values the Pontians had struggled to preserve proved to be an inappropriate preparation for a society such as that of modern Greece that is experiencing rapid change and development.

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**Appendix A****Fear type allocation (FSS-III) and factor loadings for the native group (N = 103) and for the Pontian group (N = 101)**

Items	Native Greeks		Pontian Greeks	
	Factor I	Factor II	Factor I	Factor II
Open wounds		.50		.21
Being alone	.29		.21	
Being in a strange place	.41		.33	
Dead people		.35		.25
Speaking in public	.38		.21	
Crossing streets		.63		.36
Falling		.56		.63
Being teased	.51		.49	
Failure	.63		.54	
Being touched by others		.39		.38
Entering a room when others seated		.38		.46
High places on land		.50		.41
People with deformities		.35		.29
Worms		.57		.70
Receiving injections		.61		.53
Strangers	.29		.47	
Bats		.27		.40
Journeys by train		.38		.54
Journeys by bus		.29		.43
Journeys by car		.41		.48
People in authority	.36		.43	
Flying insects		.48		.31
Seeing other people injected		.60		.69
Crowds		.67		.31
Large open spaces		.56		.48
One person bullying another	.61		.43	
Sight of deep water		.50		.39
Tough-looking people		.29		.30
Being watched working	.36		.26	
Dirt		.28		.39
Crawling insects		.74		.35
Sight of fighting		.57		.49
Sight of earthworms		.47		.36
Ugly people		.35		.30
Sight of fire		.29		.36
Sick people		.60		.57
Being criticized	.54		.45	
Strange shapes		.52		.48

**Appendix A (continued)**

Items	Native Greeks		Pontian Greeks	
	Factor I	Factor II	Factor I	Factor II
Being in an elevator		.45		.45
Witnessing surgical operations		.63		.53
Mice		.26		.49
Human blood		.60		.21
Sight of a rat		.27		.29
Animal blood		.37		.48
Enclosed places		.43		.50
Feeling rejected by others	.71		.64	
Sight of knives or sharp objects		.33		.31
Sight of parasites		.70		.31
Airplanes		.62		.44
Medical odours		.64		.64
Feeling disapproved of	.63		.63	
Harmless snakes		.33		.40
Sight of weapons		.35		.43
Sudden noise		.55		.50
Being in a storm		.46		.52
Cemeteries		.39		.32
Being ignored	.71		.55	
Nude men		.28		.46
Nude women		.38		.38
Doctors		.57		.55
Visiting people who never clean their houses		.72		.35
Making mistakes	.69		.62	
Looking foolish	.80		.60	
Working with poisoned material		.31		.35

Note: Factor I = Social Fears; Factor II = Non-social Fears.