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# Status and power differentials in the generation of fear in three California earthquakes



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#### ABSTRACT

Natural hazards, particularly those that occur without warning are likely to generate fear in those in or near the area affected. While the expression of fear and other emotions are ubiquitous in a disaster situation, they are not universal nor are they uniform in intensity of expression. In this study, three California earthquakes will be the focus for a comparative analysis of survey findings that attempt to measure the expression and intensity of fear during the ground motion generated by these earthquakes. Though now occupying "historic" status, two of the three earthquakes examined in this study remain the most recent earthquake disasters to impact northern and southern California. The study is informed by the literature on the Sociology of Emotions and will test a theory by Theodore Kemper that associates emotional expression with status and power differentials in society. The results provide support for Kemper's theory though there are significant determinants of fear that are not explained by the status and power theory of emotions. These factors, largely situational, merit further study and indicate that more comprehensive theories of emotion generation and expression are needed.

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As defined in the broadest sense, fear is an emotion associated with, and in most cases a response to, some form of actual or perceived threat. Fear is often experienced during rapid onset disasters but has rarely been the primary focus of study by social scientists. While there is conventional wisdom regarding how intense fear affects disaster response, this paper will examine the situational, demographic and socio-cultural antecedents of fear rather than its behavioral consequences. Thus, the research question that drives this study is: who are the fearful in a significant and damaging earthquake and what factors are related to high and low levels of expressed fear? I will also test a sociological theory suggesting that differential power and status explain the expression of fear.

#### 1. The literature: some components of fear

The last decade has witnessed a significant level of interest in the Sociology of Emotions including the publication of two "handbooks" summarizing empirical studies and theoretical orientations in this emerging field [29,30]. Though they do not ignore fear, they give it scant attention and do not address it at all in

the context of natural disasters. Nevertheless, these volumes provide good summaries of research to date as well as theoretical orientations which will be employed in explaining our survey findings. Emotions can be defined as "transient, bio-psycho-social reactions to events that have consequences for our welfare and potentially require immediate action" [19] or "rapid information processing systems that help us act with minimal conscious deliberation" [32]. Most sociologists who study emotions identify four basic, or primary, emotions including: satisfaction—happiness, aversion—fear, assertion—anger and disappointment—sadness (as summarized in [33]). Three of these four are regarded as "negative" emotions and my principal interest will be in aversion—fear, or just fear.

Shaver et al. [25, p. 43] examined emotion prototypes as proposed by Fehr and Russell [5] and suggest that "fear accounts begin with an interpretation of events as potentially dangerous or threatening to the self—most commonly, an anticipation of physical harm, loss, rejection or failure. The fear antecedents also include a set of situational factors (unfamiliar situation, being in the dark, being alone) that probably increase the person's perceived vulnerability to such threats and impede his or her chances of coping effectively." Shaver and colleagues also cite [21, p. 43] in describing the fearful person as "relatively weak or low in potency; some aspect of the self (e.g. physical well-being, social position, or sense of competence) is potentially under attack and the fearful person is relatively helpless to do anything about it..." (see also [22]).

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In studies of emotion, fear and other negative emotions generally have been shown to vary with gender [24,26,27,3], ethnic identification [18,19,36] and socio-economic status 11,17,33,27,35]. Non-disaster related differences in emotional expression by gender have been reported in "culturally prescribed gender roles (e.g. the role of child caretaker vs. economic provider); social motives such as the need for intimacy vs. control; and adapting to the power and status imbalances between the two sexes, in which men typically have higher power and status than do women" [3, p. 395] (see also [1,2]). Elsewhere, Brody observes that many negative emotions, including distress, feelings of vulnerability, fear and hurt are also reported more by women than men [2]. Shields et al. caution that in self-reports of emotion. particularly in hypothetical or ambiguous situations, results are likely to reflect conformity to gender-emotion stereotypes rather than actual felt emotion [26]. Simon, in summarizing research on gender and emotion, states "women report significantly more frequent negative emotions (including anger, sadness and anxiety) as well as significantly fewer positive emotions (such as happiness and calm) than do men" [27, p. 431]. Schrock and Knop [24] emphasize the role of socialization, that children are raised to associate their gender with particular emotions in the contexts of home, school, athletics and work.

Matsumoto found differences in several dimensions of emotions based on ethnicity [18]. This study, a rare examination of cultural differences on various measures of emotion within a country, found significant differences in "emotional judgements, display rules and self-reported emotional expressions as a function of ethnicity in an American sample" [18, p. 118]. In regard to fear, Hispanics and African-Americans differed significantly from Caucasians and Asians on intensity as assessed by the Affect Intensity Measure [16] indicating higher levels of fear among Hispanics and African-Americans based on the 40 item instrument which evaluates the intensity of typical emotional experiences. Citing "a history of oppression and subjugation" of African-Americans, Matsumoto suggests "the existence of large-scale, social-based influences... would effect changes in emotion systems in the different ethnic groups" [18, p. 119]. In a more recent article [19], the authors note that in different cultures (and presumably different ethnic subcultures) both the frequency and type of emotion initiating triggers will vary. Wilkins and Pace, in their summary of race and emotions, note that "social and economic disadvantages... make everyday life more difficult, amplifies bad treatment from others, leads to more loss and fewer resources to solve problems, and marginalizes people" [36, p. 390].

A number of studies have identified the unequal distribution of status and power as a basic determinant of emotional expression [7–11,33,35,27]. Essentially, those higher in the stratification system will express positive emotions to a greater extent than those lower in the system. In a general social context, Lively and Heise [17] found that older persons, the better educated, those in more prestigious occupations and people with larger families all reported more positive emotions than the young, those with lower levels of education, occupants of less prestigious occupations and those with fewer children. Turner [33, p. 180–181] states "those who receive larger amounts and a greater variety of resources will be morally valued over those who have fewer levels and a more limited variety of resources. Once these differential moral evaluations are established, individuals with higher or lower evaluations will experience different emotions. Those with higher evaluations and larger shares of resources will experience more positive emotions than those with low moral evaluations and fewer resources."

Emotion has not been ignored in studies of disaster (e.g. see [4] on the role of emotional expression in disaster response organizations) but research has concentrated on emotions that are

perceived to be positive, particularly those associated with altruism (e.g. compassion). Certainly, case studies in numerous disasters have demonstrated the salience of altruism in the immediate post-impact phase of a disaster (see summaries of this extensive literature in [20,31]). But, fear is also present, probably omnipresent during and immediately following a natural disaster, yet little attention has been paid to its generation or consequences. This differential emphasis on positive emotions may reflect a desire to avoid fear as a negative emotion, often associated with a discredited "breakdown" model of human behavior in disaster that persists despite an overwhelming amount of empirical evidence to the contrary.

One notable exception is the explicit treatment of fear by Turner and colleagues [34]. Turner examined fear within the context of an earthquake threat as well as the actual experience of an earthquake, thus a review of the findings and implications is instructive. Using survey methods and a questionnaire item structured very much like the one used in the present study, Turner et al. measured both prospective fear, that is fear of a hypothetical damaging earthquake in the future and, among those who had experienced an earthquake, fear during and immediately after its occurrence. They found that fear, both in anticipation of a damaging earthquake and as expressed by those who had experienced an earthquake (not necessarily a damaging event), was highly prevalent. Approximately 63% of those who anticipated a damaging earthquake, and 59% of those who had experienced an earthquake, reported being very frightened or somewhat frightened.

In addition to examining fear as an independent variable and looking at the consequences of varying levels of fear, Turner et al. also treated fear as the dependent variable. He found that women, non-Caucasians and young people reported higher levels of fear than men, Caucasians and older persons. Turner et al. also found that information gleaned from informal discussion (in contrast to information from books, magazines and electronic media) tended to enhance fear of a future earthquake, possibly by virtue of the close association between informal discussion and rumor. Another intervening variable discovered by Turner and colleagues was fatalism, found to be prevalent among African-Americans, Mexican-Americans and those with lower levels of education. Fatalism tended to deter people from taking earthquake threat information seriously despite high levels of fear.

The pattern which emerges from this review of the literature is that negative emotions, including fear, are likely to be expressed by those who are relatively powerless by virtue of socialized gender roles, social disadvantages imposed on some ethnic groups, and lower standing in the stratification hierarchy. I anticipate that women, ethnic minorities and people with lower incomes will be overrepresented among those who express higher levels of fear in the three earthquakes which are the subjects of this study. While status differences are likely to be salient, I will also examine other factors that may be operating, particularly the intensity of ground motion experienced, the level of confidence expressed in one's prior earthquake preparedness, the presence of others (particularly dependent children) during the earthquakes, experience with prior earthquakes and length of residence in California. These factors can be viewed as situational (e.g. ground motion intensity, experience with prior earthquakes, the presence of others and length of California residence) and those related to status (e.g. confidence in earthquake preparedness and possibly the presence of dependent children) in that preparedness may be more prevalent among more privileged groups and associated with a gender-based role of women to protect children in a crisis. In addition, I must add the caveat that this research applies specifically to the United States and that the results of this study should be viewed in this cultural context.

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