9492

Fear of Crime: An Empirical Clarification of a Major Problem*

by

Terry L. Baumer, Ph.D.
Assistant Professor of Public and Environmental Affairs
Indiana University at South Bend

and

Dennis P. Rosenbaum, Ph.D.
Director of Research and Planning
Evanston, IL Police Department

Paper presented at the annual meeting of the American Psychological Association, Washington, D.C. August 23-27, 1982.

*The research reported here was supported under Grant Number 79-NI-AX-0124 from the Office of Research and Evaluation Methods, National Institute of Justice, U.S. Department of Justice. Points of view or opinions expressed in this report are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice. Portions of this paper appeared in the Final Report and User's Manual of the above grant.

INTRODUCTION

During the past 15 years large social surveys, particularly in the form of victimization studies, have altered considerably both the focus of criminological research and the way in which we define the crime problem. One result of these changes has been the identitification of fear of crime as a major component of the crime problem. While crime is viewed as affecting the social order directly through personal injury, loss of property and loss of revenue, fear produced by the threat of crime is said to damage the social fabric by restricting activites, interaction, and ultimately reducing social control. As such, the topic has received considerable attention from public opinion researchers (see Baumer and DuBow, 1977), Presidential Commissions (President's Commission on Law Enforcement and Administration of Justice, 1967), academic researchers (cf. Conklin, 1975; Skogan and Maxfield, 1981), and crime prevention programs (e.g. Fowler, McCalla and Mangione, 1979; McPherson and Silloway, 1980; U.S. Department of Housing and Urban Development, 1979).

Given the length of time, importance of the issue, and the level of attention directed toward the fear of crime, one might expect to find substantial agreement about both the nature of the construct and appropriate operational measures. Unfortunately, this is not the case. In general the work has been piecemeal and noncummulative. From 1967 to the present only a handful of researchers have struggled with the conceptual problems associated with defining fear of crime (see DuBow, McCabe and Kaplan, 1978). Survey research questions con-

cerning the phenomenon are often created with only scant attention paid to face valididty or simply adapted from other surveys. With only a few recent exceptions (e.g., Baumer, 1980; Lavarkas, 1979), researchers have demonstrated little interest in the development of valid measures with known reliabilities (cf. Conklin, 1975; Biderman, Johnson, McIntyre, and Weir, 1967).

Such a collective inattention to measurement issues has serious implications for the design, implementation and evaluation of public programs. Both the U.S. Department of Justice and the U.S. Department of Housing and Urban Development have mandated the reduction of both crime and "fear of crime" as primary goals of their crime prevention programs (LEAA, 1978; DHUD, 1979). However, the systematic development of an effective crime and/or fear reduction program requires an adequate understanding of both the extent and nature of these phenomena. Without valid and reliable measures of the key outcome variables it is very difficult either to assess the problem or to design an appropirate intervention. The evaluation of existing programs can be hindered similarly by poor measurement. As Rossi and Freeman write "accuracy in measurement is traditionally viewed as two separate issues, reliability and validity . . . In order to have any worth, an impact assessment must meet the requirements of both" (1982: 187).

This paper reports the results of a study designed to develop multi-item measures of fear of crime and related constructs. The approach was to apply standard techniques of scale construction to this topic area in a systematic and cumulative fashion. Particular attention was directed toward conceptual issues as well as the technical aspects of scale construction. The goal was to develop indices

which were empirically and conceptually distinct; to the extent possible, consistent with prior usage of the construct; and relevant to an existing theoretical framework.

Background

As a step toward both conceptual clarity and definition of the variable universe, a comprehensive review of the fear of crime literature was initially conducted. This was not a substantive review, but rather, a methodological review of prior measures. The twofold purpose was to identify existing commonalities of definition as well as pripr operationalizations. This review identified several principal dimensions of common usage which are discussed below.

As suggested above, "fear of crime" has not been clearly defined in either popular or scientific usage. Close examination indicates that the term has been used in reference to a wide variety of feelings, beliefs, perceptions, opinions, and behaviors regarding crime. Certainly, "fear of crime," as commonly conceived, is not fear of crime at all. Technically speaking, "fear" refers to an immediate, acute, emotional and physiological response to a particular stimulus event. While theories of emotions tend to include the components of subjective awareness, autonomic/visceral reactions, and expressive behaviors, similar to those found in the fear of crime literature, these reactions are usually conceptualized as following immediately from a specific stimulus event and measurement is usually taken shortly thereafter (see Leventhal, 1974; Plutchik, 1980). Obviously, the "fear of crime" literature focuses on more distant, and for many

respondents, less tangible criminal events and enviornmental conditions. Given these considerations, the reactions most commonly referred to as "fear of crime" are more closely related to anxiety than fear.

Since the initial studies in this area conducted for the President's Commission on Law Enforcement and Administration of Justice, researchers have regularly acknowledged the multidimensionality of "fear of crime" and the need to refine this construct. These attempts at conceptual specification, while generally noncumulative, do identify several distinct components of the topic. Below we identify four of the most frequent of these.

A decade ago, Furstenberg (1971) demonstrated that the ranking of crime as a social issue was distinct from other, more direct measures of fear. Employing a subjective measure of personal risk as the alternative measure, he very convincingly demonstrated the discriminate validity of the two constructs. This analysis indicated that the 'ranking' measure was more indicative of a general concern about crime as an abstract threat to the social order. As such, it was more closely related to personal values and political considerations than the typical conceptualization of "fear of crime" should be. This was, indeed, a useful distinction which was later employed and substantiated by Conklin (1975) in his well known work. More recently, DuBow, McCabe, and Kaplan (1978) have generalized the construct and made the value basis of this component explicit. In doing so, they grouped several similar operational measures under a broad category of crime related values. While concern about crime as a social problem is clearly part of the "crime problem" and may effect political action, the general consensus is that it is not intimately related to what is generally meant by "fear of crime."

A second dimension often hidden by the operational diversity of the topic area refers to perceptual or cognitive statements about the nature of the local crime problem. Operationalizations of this construct generally refer to subjective estimates of the extent of crime in the respondent's immediate environment. Conklin labelled this "perceptions of crime" and argued that under certain conditions these perceptions could contribute in a negative way to feelings of personal safety (1975:76-85). Although there is no general conceptual or operational consensus about the nature of this dimension, several other authors have delineated a similar construct. DuBow et al (1978) have identified a category of "judgments about the factual distribution of crime", which includes both a general referent about the extent of crime and a subjective estimate of personal risk. While the former clearly refers to a cognitive or perceptual process, the latter is more evaluative in the sense that in order to arrive at an assessment of personal risk, the individual must evaluate the subjective amount of crime in terms of personal threat or chances of victimization. Although their opearationalization diverges considerably, both Fowler, McCalla, and Mangione (1979:109) and Sparks, Genn, and Dodd (1977) also treat these cognitive and evaluative dimensions separately. Thus, there is some convergence about the idea that information concerning the amount of crime in the local environment, variously referred to as "perceptions about crime," "judgments about the factual distribution of crime," or "cognitive perceptions," constitutes a distinct component of the fear of crime issue.

The third conceptual area usually refers to a more personal or

emotional dimension of the "fear of crime" issue. It is this component which most closely corresponds to the common conceptualization of that broader construct and toward which the majority of operational measures of fear of crime are directed. This set of measures focuses on subjective assessment of personal danger. Operationally, respondents may be asked to assess their risk of victimization, or report an emotional state such as "fear," "worry," or "concern" but the common denominator is a subject's assessment of personal danger. Drawing on Furstenberg's (1971) distinction between concern and risk, Conklin described this conponent as "feelings of personal safety" (1975:81-85). His research demonstrated that this component was not only conceptually but also empirically distinct from the perceptual dimension, a finding later substantiated by Baumer (1979). This dimension has subsequently been referred to as emotional reactions to crime (DuBow et al., 1978) and the affective component of residents' subjective responses to crime (Fowler et al., 1979).

Behavioral reactions designed to protect one from victimization constitute the fourth dimension of the "fear of crime" issue to be clearly distinguished in previous literature. Indeed, it has been suggested that this set of reactions constitutes the most critical of the four (Wilson, 1976; Baumer, 1980). Most arguments concerning the negative impact of crime and fear ultimately rest on some form of behavioral modification as the mechanism through which the social order is damaged (cf.,McIntyre, 1967). While perceptual and emotional reactions to crime may be of psychological import, their impact on the social order rests on some form of behavioral modification.

Within the area of behavioral adaptations, several authors have

identified specific subtypes of action. Furstenberg (1972) distingushes between "avoidance" and "mobilization" measures--a distinction paralelled by Kleinman and David's (1972) "passive" and "aggressive" responses. In general, avoidance or passive measures involve little expense or effort and include such measures as staying off of the streets, ignoring strangers and locking doors, while mobilization or aggressive strategies include buying a gun or installing a burglar alarm. More recently, DuBow et al. (1978) have described six types of behavioral response: avoidance, home protection, personal protection, insurance, communication, and participation. Other researchers have focused on the purpose of the acts and have constructed multi-item scales concerned with either property (Lavrakas, 1979) or personal protection (Baumer, 1980).

In sum, although development has been slow, a few conceptual regularities can be identified within the "fear of crime" literature. At least four broad categories can be identified. First, concern about crime involves the relative ranking of crime when compared to other social problems. Second, perceptions of crime involve beliefs about the amount of crime in the citizen's immediate environment. Third, feelings of personal danger involve the personalization of threat, that is, the interpretation of environmental danger in personal terms. Fourth, behavioral adaptations constitute a very broad, but distinct, dimension of the fear of crime literature which some authors have suggested contains several subtypes.

Each of the above areas has received some conceptual or empirical support in the existing literature as a distinct component of the fear of crime issue. However, most of the studies addressed only one or two of the dimensions and only a few seriously considered measure-

ment issues or attempted to construct scales with documented characteristics. This study addressed these issues directly.

PROCEDURES

This project employed a comprehensive approach to the development of measures of "fear of crime." Although much attention has been directed to the "fear of crime" issue, few authors have been concerned with the systematic development of measures which meet commonly defined standards of reliability and validity. The procedures employed may be divided into four basic activities: (1) identification of the variable domain; (2) a pilot study which was directed toward data reduction and initial scale development; (3) the development of a ratio scale response format; (4) scale refinement including further tests of reliability and validity conducted on a second sample. Items one through three constituted a preparatory stage of the current research. As such, they have been reported in detail elsewhere (see Baumer and Rosenbaum, 1980; Rosenbaum and Baumer, 1980) and only the procedural and substantive details most relevant to the final scales will be reported here.

Preparatory Activities

The first major task was to identify the domain of existing measures in order to define the topic area referred to here as "fear of crime." This process involved an extensive search of survey items concerning public opinion, attitudes, feelings, perceptions,

and behavioral reactions pertinent to crime. The search covered published articles, unpublished project reports, and other documentation on public opinion polls, criminal justice research studies, and criminal justice program evaluations. Particularly useful in this search was a computerized file of questionnaires and interview schedules developed by the Northwestern University Reactions to Crime Project (NIJ grant 78-NI-AX-0057), as well as computerized searches on public opinion and crime prevention program evaluations, conducted for us by the National Criminal Justice Reference Service. As a result, over 500 items on this topic were identified, although many of these were common items or simply minor variations on a common question. These items were then sorted and grouped according to content areas.

From this large pool of items it was necessary to identify a subset of representative items which might be investigated within the constraints of the project. This was accomplished through four alternative procedures. First, when available, objective data concerning the reliability and/or validity of the measures were considered. This approach was considered the ideal standard, but the underdeveloped nature of the area produced little information on the existing measures. The second review involved a more subjective estimate in terms of applicability to the identified topic areas, face validity, and actual or estimated response rates and frequency distributions. Items which "failed" in one or more of these areas were deleted. Third, items with extensive prior usage were included regardless of the subjective evaluation of their utility. Finally, the members of an advisory board were asked to evaluate and comment on a preliminary

reduced pool of items for possible inclusion in the initial data collection effort. This final process resulted in the addition of two sets of items and the deletion or modification of several questions. After identifying the above subset of potential items, a pilot study was conducted in order to further reduce the number of individual items and identify potential scales. The pilot instrument was prepared in the form of a self-administered questionnaire, requiring approximately 20-30 minutes to complete. The majority of the 275 respondents were undergraduates enrolled in social science classes in three major universities in the Chicago area. The preliminary instrument included approximately 200 data points. Many of these items were designed to measure neighborhood and personal characteristics or were scales of other constructs useful for testing discriminant validity. Ninety items served as our central measures of fear-related constructs.

Analysis of the pilot data focused on the dual goals of data reduction and the identification sets of items with desirable scale characteristics. Thus, our analysis plan focused on conducting tests of unidimensionality and internal consistency. Items thought to be indicators of a common construct were initially analyzed together. The primary analytic tool at this stage was factor analysis. A single factor solution, using Kaiser's criterion was taken as evidence of unidimensionality. If at this stage a multifactor solution was obtained, the items loading significantly on each factor were then analyzed separately until a single factor structure was obtained. Of course, there are other methods of defining unidimensionality, the most prominent of which are Guttman scaling (Gorden, 1977) and

most recently Rasch modeling (Andrich, 1978). Where the item characteristics suggested the potential applicability, these other approaches were employed.[1]

The internal consistency of each potential scale was assessed by computing the alpha coefficient (Cronbach, 1951; Novick & Lewis, 1967; Nunnally & Durham, 1975), which is a summary measure of the average covariation of all items in the scale. Our analytic goal here was to optimize reliability by balancing the desire for maximum internal consistency with our desire for concise indices.

The above analysis of the pilot data identified several potentially useful scales and further reduced the number of items. Five possible scales composed of 19 items were derived from these data. Details for the analysis and potential scales were presented in Rosenbaum and Baumer (1980) and are briefly summarized in the results section of this report.

There are two components to any structured survey question -- the question itself (content; focus) and the answers or response options that are attached to it. The latter half was the focus of a special study conducted to determine the most appropriate response formats for the fear-related questions being studied. Rather than arbitrarily select a set of response options (which has been the usual practice), a magnitude estimation study was undertaken to identify response scales which (1) approximated a ratio scale, (2) had an optimum number of response alternatives as determined by both practical and statistical factors, and (3) demonstrated stability across items.

The results of this phase of the research were used to identify response alternatives which met the characteristics described above.

These were then matched with the scale items recommended by the initial analysis and the modified questions included in the final instrument. As with the previous section, details of this study were presented in Rosenbaum and Baumer (1980).

The Field Survey: Further Tests of Reliability and Validity.

In order to complete scale development, additional data were collected during June and July of 1980. This set of activities was directed toward three critical areas: (1) the internal consistency of the preliminary scales when applied to the general urban population, (2) the temporal stability of these measures, and (3) the validity of the derived measures. The procedures related to each of these areas are discussed briefly below.

The principal data collection effort at this stage focused on the performance of the preliminary scales in the general population. Data were obtained by means of telephone interviews with 315 residents of two urban areas -- Evanston, Illinois, a suburb of Chicago and an area of Chicago loosely defined as Wicker Park. All respondents were selected by random digit dialing procedures. Only residential numbers were defined as eligible, with businesses and group quarters excluded. In addition, due to budgetary constraints, the interviews were conducted only in English. This restriction constituted no problem in the Evanston sample, but for the Wicker Park area non-English speaking households (mostly Spanish) constituted approximately 25 percent of the known eligible households (completed interview, breakoffs, refusals, and non-English). Within each household residents 19 years or older were eligible for selection. Items

retained from the pilot instrument were adapted to include the modified response formats produced by the magnitude estimation study.

The final disposition of eligible households is presented in Table 1. Refusals varied around 29 percent, while the total proportion of completed interviews was 54.9 percent. This latter figure was considerably higher in Evanston (66.8%) and lower in Wicker Park (46.2%). As suggested above, the difference in completion rate is due to the greater number of non-English households in Wicker Park (25.2%) than Evanston (1.6%). If non-English households are defined as ineligible as was operationally the case, the completion rates in Evanston (67.9%) and Wicker Park (61.8%) are similar and reflect general current completion rates for telephone interviews. Although refusal rates are somewhat higher than those reported by Steeh (1981) they are considerably lower than those reported in an earlier survey on a similar topic (Skogan, 1980).

Since the purpose of this stage of the research was to establish the external validity of the preliminary results, the analysis paralleled that performed on the pilot data. The principle tools were factor analysis and alpha reliabilities. As discussed in the results section of this report some preliminary scales were verified while others were modified.

In addition to internal consistency, temporal stability is an important feature of a reliable scale. Repeated measures of an enduring trait or construct should produce similar results with each application. Temporal stability or test-retest reliability is typically assessed by readministering the scale to the same respondents a second time and then computing the correlation between the measures taken the first time and those repeated the second time. To estimate the temporal stability of our scales, the preliminary instrument was re-

Table 1. Final Disposition of Eligible Households[A]

Disposition	Evanston	Wicker Park	Total
Completed interview	161 (66.8%)	154 (46.2%)	315 (54.9%)
Refusal	73 (30.3%)	94 (28.2%)	167 (29.1%)
Breakoff	3 (1.2%)	1 (0.3%)	4 (0.7%)
Non-English	4 (1.6%)	84 (25.2%)	88 (15.3%)
Total	241 (100%)	333 (100%)	574 (100%)

[A]Includes all numbers identified as households. Although some non-English numbers could be businesses, or ineligible households, for purposes of this analysis all are assumed to be potentially eligible households.

administered twice to a subsample of 34 Evanston respondents, once after two weeks and then again two weeks later. Three observations were conducted, rather than the usual two, for the purpose of distinguishing true change from measurement unreliability (see Heise, 1969).

In additon to verifying the generalizability of the initial results, the telephone survey also served as a data base for testing other aspects of validity. In fact, the choice of respondents was determined by these validity questions. Most of these were addressed to construct validity. As Crano & Brewer (1973) note, construct validity can be assessed in a number of ways, but one of the most common strategies is called the "known-groups method." This validation procedure requires that data be collected from groups that are known to differ (or are theoretically expected to differ) on the attribute or construct being measured. This approach is based on the assumption that if a scale actually measures the construct which it was designed to measure, then groups known or expected to differ on this construct should be discriminable according to their scale scores. Group membership may be defined in terms of one or more variables.

The known-groups method was an important part of scale validation. Three major sets of variables (or "known groups") were identified for hypothesis testing: (1) level and type of crime in the respondent's neighborhood, (2) respondent's victimization history, and (3) the respondent's personal characteristics. In general, it was hypothesized that scales which purport to measure various components of fear of crime should differentiate between individuals who reside in neighborhoods with differing crime problems, who have different victimization histories, and who have different individual characteristics. The samples selected for the application of the telephone

survey were determined by these hypotheses about known group differences. Thus, telephone interviews were conducted with residents from two geographically distinct urban neighborhoods--one having moderately high street crime (n = 154) and the other having moderately low street crime (n = 161). Furthermore, a sample of 83 crime victims (35 personal robberies/assaults and 48 residential burglaries) was drawn from police records and interviewed by telephone.

Our efforts to assess the construct validity of these new scales did not stop with the known groups technique. Several additional validation strategies were exploited in the present research. As noted earlier, various forms of inter-item correlations constitute an important method of determining whether the measures are, indeed, tapping the factors which they are expected to measure. Again, both factor analysis and tests of internal consistency played a very significant role in scrutinizing the internal structure of the revised scales.

Another fundamental set of validation procedures for testing construct validity is commonly referred to as tests of "convergent" and "discriminant" validity. Although we did not utilize the complete multitrait-multimethod matrix technique proposed by Campbell & Fiske (1959), we did follow the basic logic of this approach by measuring variables other than fear of crime to look for possible convergence or divergence of measures. The basic question was the following--Are the fear of crime scales related or unrelated to other variables in a theoretically predictable way? Thus, we tested a number of hypotheses concerning the relationship between the fear of crime scales and their expected antecedents, consequences, and noncorrelates.

RESULTS

Pilot Study

The primary objective of the pilot study was data reduction and preliminary scale development. The analysis of this data identified five scales with clearly acceptable characteristics and three additional scales with very marginal characteristics. The five clearly superior scales were consistent with the three principal dimensions identified by previous research, while all three marginal scales were composed of behavioral self-reports. Each of these is discussed briefly below. For a detalied discussion of the pilot study the reader is referred to Rosenbaum and Baumer (1980).

Scale Refinement

Perceptions of Crime. The pilot study produced a three item scale of "perceptions of crime" from an initial pool of eleven questions. The final items queried respondents about their perceptions of the frequency of robbery and assault in the neighborhood as well as their beliefs about the overall crime rate in the immediate environment. Together the scale formed from these three items demonstrated an alpha reliability of .863.

Analysis of the data from the telephone survey were supportive of the above results. Table 2 presents the factor loadings and item-total correlations for the additive scale. All factor loadings were strong, with the single factor accounting for 71.3 percent of the

Table 2. Factor Loadings and Item-Total Correlations for "Perceptions of Crime" Items (N = 301)[A]

Item	Factor Loading[B]	Item-Total Correlations
Frequency of Robbery	.752	.643
Frequency of Assault	.785	.661
Overall Crime Rate	.728	.636

[A]Urban neighborhood samples only.

[B]This single factor accounted for 71.3 percent of the variance of the items.

variance in the three items. The alpha reliability of .801 for the index is somewhat lower than, but compares favorably to that derived from the pilot study. The strength, and general equality of the item-total correlations (Table 2) indicate that all three items are central to the construct.

In addition to internal consistency, the temporal stability of the scale was investigated next. This characteristic is customarily identified by test-retest correlations. Unfortunately, test-retest correlations are subject to measurement error as well as temporal instability. Heise (1969), has demonstrated that by employing three data points, rather than only two, test-retest correlations may be corrected for attenuation. The resulting stability coefficients provide estimates of the stability of the underlying construct. This procedure also allows the calculation of a corrected reliability coefficient. Thus, for all scales we report the test-retest correlations, stability coefficients and the corrected reliability coefficient.

Table 3 presents the test-retest correlations and stability coefficients for the above scale. All three of the test-retest correlations are very high. Corresponding to these high correlations, the corrected reliability coefficient of .84 suggests a very reliable index. In addition, the stability coefficients are all very high, ranging from .85 to 1.0. This suggests that the underlying construct is very stable. Thus, by all measures, this appears to be a reliable index.

The construct validity of the scale in terms of whether it is related to other antecedent and consequent variables in a theoret-

Table 3. Test/Retest Correlations and Stability Coefficients "Perceptions of Crime Scale" (N = 34)

	T_2	T_3
T_1	.72 (.85)[A]	.73 (.85)
T_2		.84 (1.0)

[A]Stability coefficients in parenthesis.

ically predictable way was next identified. As originally discussed above, this construct corresponds to simple perceptions of or beliefs about the environment and is devoid of any evaluative component. As such, it is a measure of neighborhood reputation, information, or beliefs about the extent of crime in the local environment. Although the actual operationalization differs considerably, Conklin (1975) argues that this construct is most appropriately considered as an indicator of the criminal environment of an area. Given this conceptualization, several hypothesis, which are presented below, were stated and tested about the correlates of this construct.

First, assuming some relationship between perceptions and reality, it was hypothesized that this index should be sensitive to ecological variations in crime rates, especially differences in "street crime." To test this hypothesis, an urban area of moderately high street crime (Wicker Park, Chicago) was compared with a suburban area of moderately low street crime (Evanston, Illinois). Neither was extremely high or low, but the index should be sensitive enough to identify a significant difference. Indeed, the urban residents did score significantly higher on this scale than did the suburban residents ($F(1, 311) = 56.03$, $p < .01$). Hence, the Perceptions of Crime index was able to detect that the two populations were perceiving different criminal environments.

The second hypothesis stated that the two variables most strongly related to traditional measures of fear -- sex and age of the respondent -- will not be related to the Perceptions of Crime scale. The rationale for this hypothesis is that the scale is intended to measure a relatively nonevaluative, impersonal assessment of the

local crime rate, whereas traditional measures of fear (e.g., feelings of safety) have focused largely on evaluating crime in terms of the threat that it poses to oneself (we shall cover the latter in the next section). Thus, it was hypothesized that the respondents would be able to make an assessment of the local crime rate that is unaffected by their own personal characteristics. The results support this hypothesis, as neither sex ($F(1,309) = 0.08$; $p < .05$) nor age ($F(5,303) = 1.6$; $p < .05$) was related to the Perceptions of Crime scale. These findings are consistent with those reported by Conklin (1975).

Although this index is being viewed as a somewhat independent assessment of the amount of local crime, the third hypothesis stated that this measure would be affected by personal and vicarious experiences about crime which are relevant to the perception being formed. Specifically, the third hypothesis stated that recent victims of robbery and assault will perceive more crime than nonvictims, as measured by this index, but that recent victims of burglary will not perceive the crime problem any differently than nonvictims. The perceptions of crime held by burglary victims were not expected to change as a function of their victimization experience because the index focuses primarily on "street crime" or "violent crimes."

As noted earlier, a separate sample of victims was drawn from Evanston police reports to help test this hypothesis. The results clearly support the hypothesis: The robbery and assault victims perceived significantly more crime in their neighborhoods than did nonvictims (F (1, 185 = 14.86; $p < .01$). Furthermore, the burglary victims perceived no more crime than nonvictims (F (, 198) = 0.26; $p < .05$).

The final hypothesis dealt with some potential *effects* of perceptions of crime, rather than *causes*. Specifically, the fourth hypothesis stated that perceptions of crime should affect parents' concern for the safety of their children. We asked parents how worried they were about their children being robbed or assaulted in the immediate neighborhood. The results confirmed our expectations that parents who scored high on the Perceptions of Crime scale (i.e., viewed their neighborhood as having a high crime rate) would worry more about their children being robbed (F (2, 102) = 9.16; $p < .01$) or being assaulted (F (2, 104) = 9.74; $p < .01$).

To summarize, perceptions of the crime scale was constructed from three items:

1. What about robbery--that is, taking things like money, purses, or wallets from people on the street. Does this happen in your neighborhood? Never, sometimes, quite often, or very often?

2. Besides robbery, what about people being *assaulted or beaten up* on the street? Does this happen in your neighborhood... (same categories as above)?

3. Thinking about all types of crime, would you describe the crime rate in your neighborhood as very high, higher than average, about average, or lower than average?

The index is unidimensional and has internal reliability in the .80 to .86 range. The test-retest correlations were all over .70 for this scale, and the corrected reliability coefficient was .84. All hypotheses concerning the validity of the index as a measure of perceptions of crime were empirically supported. The Perceptions of Crime index is related to place of residence, prior robbery or assault victimization, and worry about the safety of one's children. As hypothesized, it was not related to sex or age, traditionally the

most powerful predictors of fear, nor was it related to prior burglary victimization. Therefore, the data suggests that this index is a reliable and valid measure of perceptions of crime. Given that respondents viewed the overall "crime rate" as strongly related to the frequency of robbery and assault, this index can be interpreted as their nonevaluative assessment of the quantity of personal crimes committed in their local neighborhoods.

Concern for Personal Safety. The next scale was initially developed to measure affective and (to some extent) evaluative responses to local environmental stimuli. This area, which we shall refer to as concern for personal safety, involves the personalization of crime, i.e., "What does the local crime problem mean in terms of my own safety?" The evaluative process may involve an assessment of one's own chances of being victimized and/or certain affective or emotional responses.

In the preliminary study, potential measures of concern for personal safety included both affective items (i.e., how worried, safe, afraid, or concerned they were about being victimized by various crimes) and evaluative items (i.e., subjective estimates of risk, defined by asking for the "likelihood" and "chances" of becoming a victim). Also included were the commonly used National Crime Survey and Gallup/NORC General Social Survey items. The initial factor analysis produced two factors -- one for personal crimes (containing all 13 items on robbery, assault, and street crime) and one for property

crimes (containing all six burglary items). Thus, type of stimulus crime (personal vs. property), rather than type of response (e.g., worry vs. concern), seemed to define the primary dimensions.

Data reduction and parsimony were pursued before moving on to the next stage of data collection and validation. The factor measuring fear of personal crimes was reduced to four items -- two affective items (afraid of robbery; afraid of assault), and two evaluative items (likelihood of robbery; likelihood of assault). These four items formed an additive index, with an alpha reliability of .94, only slightly below that of the full 13-item scale. The factor measuring fear of property crime was reduced to three items -- two affective items (afraid of burglary; concern about burglary) and one evaluative item (likelihood of burglary). This three-item index produced an alpha coefficient of .85.

The telephone survey data were then collected on the seven items described above, as well as two additional items needed to balance the item sets (concern about robbery; concern about assault). Unfortunately, this second data set did not yield the same pattern of results. Two factors emerged, but they were not defined by the personal/property distinction. Although the first factor was again predominately defined by the affective items, the second factor was not easily interpreted. Not only did the burglary items load on this second factor, but so also did the evaluative items focusing on the likelihood of victimization, including the likelihood of robbery and assault.

Although an assessment-of-risk (likelihood) scale could be developed, our primary interest here was to measure the affective dimen-

sion of fear of crime. Thus, the three likelihood items were eliminated and the six affective items were factor analyzed. The results of this analysis are presented in Table 4. The factor analysis of the remaining six items indicated that these items were unidimensional. The single factor was dominated by the four robbery and assault items, with the two burglary items demonstrating significant, but somewhat lower, loadings. There was some tendency for the "afraid" items to be more central than the "concern" items, but this trend is not strong.

Through several analytic steps, a final four-item scale was derived. The two burglary items (afraid, concerned) were eliminated because they were least central to the index and actually suppressed the alpha coefficient. Thus, the following four-item scale, which has an alpha coefficient of .90, and seems to measure the affective dimension which we have labeled Concern for Personal Safety, was constructed:

1. When you are walking alone in your neighborhood at night, how concerned are you that someone will take something from you by force or threat? Would you say that you are not at all concerned, somewhat concerned, quite concerned, or very concerned?

2. When you are walking alone in your neighborhood at night, how concerned are you that someone will harm you? Are you.. (see #1)?

3. When you are walking alone in your neighborhood at night, how afraid are you that someone will take something from you by force or threat? Are you not at all afraid, quite afraid, or very afraid?

4. When you are walking alone in your neighborhood at night, how afraid are you that someone will harm you? Are you... (see #3)?

Item-total correlations for the above index were all within the .75-.79 range.

Table 4. Factor Analysis of Six "Concern for "Personal Safety" Items: General Population (N = 309)

Item	Factor Loadings[A]
Concern about robbery	.799
Concern about burglary	.605
Concern about assault	.823
Afraid of being robbed	.844
Afraid of being burglarized	.626
Afraid of being assaulted	.844

[A]This factor accounted for 64.3 percent of the variance in the six items.

Table 5. Test-Retest Correlations and Stability Coefficients for "Concern for Personal Safety" Scale (N = 34)

	T_2	T_3
T_1	.896 (.944)[A]	.865 (.911)
T_2		.917 (.966)

[A]Stability coefficients in parentheses.

Sinple test-retest correlations for the recommended index were all relatively high, ranging from .86 to .92 (Table 5). The refined reliability coefficient for this scale was .949, again indicating that most of the scale variance is atrributable to individual rather than error sources. Also reported in Table 5 are the derived stability coefficients for this index. The strength of these coefficients suggests that we are measuring a very stable construct. Thus, by all measures, these four items produce an internally consistent, highly reliable index of "concern for personal safety."

Several hypotheses were generated to test the validity of this Concern for Personal Safety index. First, we hypothesized that the scale should be affected by the actual and perceived crime rate in one's neighborhood. Objective environmental differences in crime were measured by place of residence (high crime area in Chicago versus low crime city of Evanston), and subjective differences were measured by the Perceptions of Crime scale identified above. As predicted, we found that respondents in the Chicago area reported feeling significantly more concerned for their personal safety than did the Evanston respondents, (F (1, 313) = 22.47, $p < .01$). Similarly, individuals who perceived more crime in their neighborhoods felt more concerned than others (F (2, 310) = 46.49, $p < .01$).

The second hypothesis addressed the effect of prior victimization on the Concern for Personal Safety index. Because concern for personal safety seems (theoretically) to be intimately connected to personal crimes (involving offender-victim contact), it was hypothesized that prior robbery victims should be more concerned about personal safety than nonvictims, but that prior victimization by burglary

should have no effect on this personal safety scale. These predictions were supported by the data. Specifically, victims of violent personal crimes (both robbery and assault) were more concerned for their safety than nonvictims, (F (1, 186) = 12.33, $p < .01$) while burglary victims did not differ (F (1, 199) = 0.52, $p < .05$) from the general population of nonvictims in their concern for personal safety. It should be noted that these results are not artifacts of the sample, since all victims were drawn from Evanston.

The third hypothesis concerned the effect of a respondent's personal characteristics on the Concern for Personal Safety scale. It was hypothesized that the respondent's age and sex would be related to feelings of safety in a predictable way, although these characteristics were not expected to be related to the Perceptions of Crime scale (as shown earlier). Unlike the Perceptions of Crime scale, the present scale personalized the crime problem by defining it in relationship to oneself. If the Concern for Personal Safety scale measures feelings about crime in terms of one's own vulnerability to victimization, then scale scores for females and the elderly should indicate more concern for personal safety than their counterparts. This hypothesis was also supported by the results. Women were more concerned about personal safety than men, (F (1, 311) = 44.65, $p < .01$) and the elderly (especially those over 65) were more concerned than younger respondents (F (5, 304) = 5.84, $p < .01$).

Finally, it was hypothesized that certain behavioral reactions should result from feeling unsafe. Specifically, a positive correlation was anticipated between the Concern for Personal Safety scale and behaviors directed at protecting oneself against street crime,

but not between the scale and behaviors directed at property protection. The data presented in Table 6 confirmed this hypothesis, as shown by the zero-order correlations. All nine of the items measuring personal protective behaviors were significantly related to the Concern for Personal Safety scale, with the correlations ranging from .18 to .55. In contrast, only one of the five items measuring property protection behaviors was related to this index.

In summary, a four-item scale was developed and validated as a measure of concern for personal safety. The final scale seems to tap the individual's fear of being victimized by street crimes, especially robbery and assault. This additive index is internally reliable, producing an alpha coefficient of .90, with item-total correlations all between .70 and .80. Test-retest correlations were all above .86. The three stability coefficients were above .90 and the refined reliability coefficient was .95. The construct validity of this four-item scale was demonstrated by empirical support for several hypotheses. Environmental differences in crime, personal characteristics of the respondent, prior experience with victimization, and behavioral reactions were all significantly related to this Concern for Personal Safety scale in the predicted manner.

Behavioral adaptations. The third area was concerned with crime-related behavioral adaptations -- those actions which people take to protect themselves or their property from harm. Like the affective reactions discussed in the previous section, these behaviors are reactions to threatening situations designed to reduce that threat. However, unlike the affective component, people may employ a wide variety of behavioral strategies to cope with the threat of crime.

Table 6. Bivariate Correlations of Selected Behavioral Responses With Concern for Personal Safety Scale

Behavioral Adaptation	Fear of Crime Scale
A. Personal Protection	
1. When you go out alone at night in your neighborhood, how often do you try to avoid certain areas?	.552*
2. How often do you try to avoid certain types of people when you go out alone at night in your neighborhood?	.493*
3. When you go out alone at night in your neighborhood, how often do you avoid carrying too much cash?	.252*
4. How often do you walk only on certain streets when you go out alone at night?	.444*
5. And how often do you avoid talking to strangers when you go out alone at night?	.352*
6. When you are home alone at night, how often do you keep all of the doors locked?	.239*
7. How about the windows--when you are home alone at night do you keep all of the windows locked?	.281*
8. When you are home alone at night, how often do you draw the curtains or pull the shades on the windows?	.184*
9. When you are home alone at night, how often do you open the door without knowing who is there?	-.238*
B. Property Protection	
10. Think of the last time you went out at night. Did you leave a light on?	.049
11. The last time your family went away for more than a day or so, did you or did someone in your family ask a neighbor to watch your home?	.052
12. The last time no one was home, did your family close and lock all of the windows?	.179*
13. Do you have "dead bolt" locks on the doors to your house or apartment?	-.041
14. Do you have bars on any of the windows to your house or apartment?	.107
15. Do you have a "burglar bar" on any of your doors?	.067

*$p < .01$

These actions may or may not be objectively effective -- and need not be situationally responsive. Given the usual absence of contrary evidence and their characteristic resistance to such evidence, even amulets, superstitions, and personal rituals can be viewed as subjectively effective coping strategies. However, this research has focused only on those actions which would appear to be potentially effective in reducing the threat of victimization and which are relatively common.

Developing indices of behavioral adaptations is considerably more problematic than for attitudinal data. Attitude theory suggests that statements about the attitude object will either cluster together or vary in intensity. Behaviors may exhibit those same characteristics but also may be interchangeable. That is, rather than engage in a group or series of actions, people may supplant one or more actions with another (i.e., engaging in A makes B unnecessary or redundant). This possibility implies that the standard techniques of scale construction, especially the isolation of a common factor, may not be applicable to some types of behavior. Thus, behavioral indices are often simple counts of the number of actions taken or the frequency of the activity. The approach in this study was first to apply the standard techniques employed in the previous sections; then, if necessary, consider other analytic alternatives.

In this research, a wide variety of potential behavioral responses to crime were initially examined. Conceptually, the 38 behavioral items that were selected fell into the five basic categories: (1) target-hardening devices used to protect against loss of property;

(2) specific home security measures employed the last time the respondent went out; (3) general home security measures employed when the respondent goes out; (4) personal protective behaviors when out alone; and (5) home invasion measures taken when at home. Each of these variable sets was initially analyzed separately to identify potential scales.

The preparatory analysis produced only marginally acceptable scales for the items in the first three categories above. The standard techniques employed for earlier scales did isolate unidimensional sets of items but the alpha reliabilities were only marginally acceptable. Following the lead of Lavrakas (1979), a Guttman analysis was performed but did not result in acceptable unidimensional scales. The present analysis produced the same basic results -- only marginally acceptable scale characteristics. Thus, while the actions contained in these three areas constitute important crime related protective activities, they did not merit inclusion in this report. Those readers interested in them are referred to Rosenbaum and Baumer (1980), or for area three, Lavrakas (1979).

At the preparatory stage, the remaining two sets of items formed acceptable scales. This first stage of analysis reduced the set of "personal protective" behavior to five items. These items asked how often they (the respondents): (1) avoid certain areas, (2) avoid certain types of people, (3) avoid carrying too much cash, (4) walk only on certain streets, and (5) avoid talking to strangers in their neighborhood. These five items were unidimensional and combined to form an additive scale with an alpha reliability of 0.75. This is

Table 7, Factor Loadings and Item-Total Correlations for Avoidance of Street Crime Items (N = 295)

Item	Factor Loading[A]	Item-Total Correlations
When you go out at night in your neighborhood, how often do you try to avoid certain areas?	.781	.700
How often do you try to avoid certain types of people when you go out alone in your neighborhood?	.718	.645
When you go out alone in your neighborhood, how often do you avoid carrying too much cash?	.506	*
How often do you walk only on certain streets when you go out at night in your neighborhood?	.715	.602
How often do you avoid talking to strangers when you go out alone at night in your neighborhood?	.544	*

[A]This single factor accounted for 54.3 percent of the variance in these five items.

*Deleted from final scale.

very similar to the alpha coefficient of 0.7 obtained by Baumer (1980: 41-42) for a slightly different set of items. Given the item content of this scale, it will subsequently be referred to as the "avoidance of street crime" scale.

The second set of behavioral items focused on security strategies which may be employed when at home. The analysis of the pilot data reduced the six original items to four: (1) locking the doors, (2) keeping the windows locked, (3) drawing the curtains, and (4) identifying visitors before opening the door. Although a three item scale (with item four deleted) produced a moderately reliable index (α= .674), all four (α= .675) were retained for further analysis. Since this index is directed more toward home invasion than burglary, it will subsequently be referred to as the protection against home invasion scale.

Of the twelve avoidance of street crime items originally included in the pilot study, five demonstrated potential scalability. Table 7 presents the results of the factor analysis of these five items. As with the preliminary results, they were found to be unidimensional. Two of the items, "restriction of cash" and "avoidance of conversation with strangers," produced somewhat lower factor loadings than the others, indicating a marginality to the central construct. When the reliability of alternative indices was investigated, the marginality of these two items was confirmed. When all five items are included, the additive scale produced an alpha reliability of .785, when the two marginal items are deleted, the coefficient for the resulting three item scale is .802 -- a substantial improvement given

the smaller number of items. The item-total correlations for this three item index, also presented in Table 7, are all moderately high and of approximately the same magnitude.[2]

Thus, the evidence would suggest that a viable index may be constructed from three items: avoidance of certain areas, avoidance of certain types of people, walking only on certain streets. The content of these items confirms the interpretation that although they do represent a protective strategy, the nature of the general response is one of avoidance rather than active protection. This is consistent with the findings of earlier studies (Furstenberg, 1972; Baumer, 1980) and supportive of suggestions made by Hindelang, et. al., that behavioral adaptations represent subtle adjustments in activities rather than major changes in behavioral policies (1978: 224).

The protection against home invasion items were analyzed next. As shown in Table 8, these items were again unidimensional. However, the factor loadings were not high, communalities were low to moderate, and the derived factor accounted for only 46 percent of the variance in the items, indicating a "loosely" defined construct. This is reflected in the similarly modest alpha reliability of .587, and low item-total correlations (Table 8). Thus, these four items define a common dimension and form a scale with marginally acceptable internal consistency. However, the question to be investigated below is whether this pattern of activity demonstrates a theoretically predictable pattern of correlates.

Test-retest correlations, stability coefficients and refined reliabilities, were next calculated for the above index. Table 9 shows

Table 8. Factor Loadings and Item-Total Correlations for Protection Against Home Invasion Items (N = 309).

Item	Factor Loading[A]	Item-Total Correlation
When you are home alone at night, how often do you keep all of the doors locked?	.655	.431
How about the windows--when you are home alone at night, do you keep all of the windows locked never, sometimes, quite often, always?	.499	.391
When you are home alone at night, how often do you draw the curtains or pull the shades?	.396	.326
When you are home alone at night, how often do you open the door without knowing who is there?	.585	.386

[A]This single factor accounted for 46.4 percent of the variance in the items.

Table 9. Test-Retest Correlations and Stability Coefficients for Protection Against Home Invasion Index (N = 34)

	T_2	T_3
T_1	.773 (.936)[A]	.728 (.942)
T_2		.778 (.942)

[A]Stability coefficients in parentheses.

that the test-retest correlations are all very strong as are the derived stability coefficients. Similarly, the associated reliability coefficient was .836. These data suggest that security measures taken when at home constitute a patterned, stable set of activities directed at the prevention of home invasion.

Finally, the construct validity of the above two behavioral scales was reviewed. The first set of hypotheses concerned how these behavioral scales are affected by the Perceptions of Crime and Concern for Personal Safety indices. To the extent that respondents perceive a crime problem in their neighborhood and interpret this problem as a threat to their own safety, they should be motivated to engage in behaviors directed at the avoidance of street crime and home invasion as means of coping with this threat. This general hypothesis, derived from the stress model, was translated into several predictions that were supported by the data.

As predicted, respondents engaged in more avoidance of street crime when they perceived more crime in their neighborhood (F (2, 310) = 19.1, $p < .01$) and when they were more concerned for their personal safety (F (3, 311) = 56.3, $p < .01$). Furthermore, they engaged in more anti-home invasion behavior when they were more concerned for their personal safety (F (3, 11) = 15.1, $p < .01$). However, contrary to expectations, anti-home invasion behaviors were unaffected by perceptions of the neighborhood crime problem (F (2, 310) = 2.7, $p > .05$). It was hypothesized that anti-home invasion behaviors would be less affected by these antecedent conditions than would avoidance of street crime behaviors,[3] but significant effects for both perceptions

of crime and safety were still expected simply because neighborhood crime is usually translated into personal threat to one's own safety and thus, a need for protection.

It was also anticipated that behavioral adaptations in general would be more closely related to concern about personal safety than to perceptions of the crime problem. In contrast to perceptions of crime, concern about safety should reflect the individual's appraisal of threat to oneself and, as such, should be more closely connected to personal coping behaviors. Indeed, the magnitude of the F ratios listed above supports this prediction, as the relationships between adaptative behaviors and feelings of safety were larger than the relationships between adaptative behaviors and perceptions of crime.

It was next hypothesized that the respondent's sex and age would affect both behavioral indices. The assumption here is that these personal characteristics are good indicators of the individual appraisal of threat and perceived vulnerability to victimization, with females and the elderly interpreting their environments as more threatening (fear-arousing) than their counterparts. If behaviors are viewed as adaptive mechanisms for reducing threat, then females and older respondents should engage in more protective behaviors.

The results clearly supported the sex hypothesis, but did not support that for age. As predicted, women were more likely than men to engage in both the avoidance of street crime (F (1, 311) = 29.6, $p < .01$) and anti-home invasion behaviors (F (1, 311) = 35.9, $p < .01$). Thus, although women perceive no more crime in their neighborhoods than men, they are more concerned about their own safety and are more likely to translate this concern into protective action.

Neither scale was affected much by age when that variable was categorized as in the preparatory analyses. However, there was some tendency for those 65 or older to score higher on the protection against home invasion scale and for those 55 or older to score higher on the avoidance of street crime scale. This effect is relatively standard in both the "fear of crime" literature (see Baumer, 1978) and for behavioral responses (Baumer, 1980). When age was dichotomized to maximize the above noted variations, those respondents over 55 years old do score significantly higher on the avoidance of street crime scale (F (1, 308) = 7.7, $p < .01$). However, no significant differences were observed for the protection against home invasion scale (F (1, 308) = 2.8, $p > .05$). Age was related to avoidance behavior but not to protection against home invasions.

The next hypothesis concerned the sensitivity of these scales to prior victimization experiences. It was hypothesized that robbery/assault victims would score higher than nonvictims on the Avoidance of Street Crime index, but may not score higher on the Protection Against Home Invasion index. The rationale was that (1) these victims are more concerned about their safety than nonvictims, and presumably are more motivated to protect themselves; (2) the behaviors comprising the Avoidance of Street Crime index are very relevant to these individuals' prior victimization, while the anti-home invasion behaviors are less relevant. The results did not support the main prediction. Robbery/assault victims and nonvictims did not differ on either scale. Hence, while robbery/assault victims perceived more crime in their neighborhoods and were more concerned about their own

safety, they did not translate these concerns into the types of behavioral adaptations measured here.

A similar hypothesis was tested regarding the sensitivity of these scales to prior burglary victimization. Because these victims had suffered from an invasion of their living quarters, we hypothesized that they would score higher than nonvictims on the Protection Against Home Invasion index, but not on the Avoidance of Street Crime index. Again, the results did not support this hypothesis, as burglary victims did not differ from nonvictims on either behavioral scale. Thus, neither robbery/assault nor burglary seems to result in additional protective behaviors of the type being measured.

To summarize, the set of items concerning protection against home invasion formed an additive scale with marginal internal consistency. Although the items comprised a unidimensional index, the alpha reliability was modest (.58) and the item-total correlations were low. However, low reliability is not a fatal problem, in itself, if the index is able to demonstrate predictable relationships with other variables (although the chances of this happening are less with an unreliable measure). Unfortunately, this index was unable to demonstrate these relationships with any consistency. It was related to concern for personal safety and sex, as expected, but was unrelated to perceptions of crime, age, or prior victimization. Taken together, the results cast doubt on the validity of the Protection Against Home Invasion scale. Consequently, it is not recommended as an acceptable scale of behavioral adaptations.

In the final analysis, only one set of items formed an accept-

able scale of behavioral responses to crime, namely, those directed at the avoidance of street crimes. Of the five items initially analyzed, two were only marginally related to the other three and these two even suppressed the alpha reliability of the scale. The final scale produced an alpha reliability of .80 and contained the following three items:

1. When you go out at night in your neighborhood, how often do you try to avoid certain areas? Do you do this never, sometimes, quite often, or always?

2. How often do you try to avoid certain types of people when you go out along in your neighborhood? Do you do this . . . (same as #1).

3. How often do you walk only on certain streets when you go out alone at night in your neighborhood? Do you do this. . .(same as #1).

With one exception, this index was correlated with all other variables, predicted. This index was related to the Perceptions of Crime and Concern for Personal Safety scales, as well as the respondent's age and sex. However, this index was not sensitive to the experience of being victimized by robbery/assault. This finding is somewhat surprising in that robbery/assault victims perceived more crime in their neighborhood than nonvictims and were more concerned about their own safety. Perhaps for crime victims these behavioral coping strategies are no longer seen as effective or sufficient and the victim has turned to more drastic measures such as not going out at night or carrying a weapon. Nonetheless, the data, as a whole, suggest that this Avoidance of Street Crime scale is a unidimensional, internally consistent, reliable, and valid measure of the frequency of personal behaviors directed at protecting oneself from victimization by "street crime."

Discriminant Validity of Derived Indices

The discriminant validity of the three final scales was investigated next. In order to have practical utility, these scales must be not only internally consistent and demonstrate a predictable pattern of correlates, they must also be distinguishable from each other, that is, show discriminant validity. Two criteria were employed for this study. First, when factor analyzed together the three scales should maintain both their unidimensionality and separate identities. Second, each index must demonstrate a unique pattern of correlates.

The factor analysis of the ten final items was supportive of the three dimensional hypothesis. Because of the anticipated relationship between the derived factors, an oblique solution was obtained. Since the number of factors extracted by Kaiser's criterion when using less than 20 items tends to be conservative, the third factor (eigenvalue = .985) was included in the final solution.[4] These results are presented in Table 10. The first factor is defined by the concern for personal safety items; the second, by the perceptions of crime items; and the third, by the avoidance of street crime items. As anticipated, all three factors are moderately correlated with the strongest of these correlations being between the concern for personal safety and avoidance of street crime factors.

The second test of discriminant validity concerned the pattern of correlates for each set of items. The identification of separate factors is a necessary but not sufficient condition for the retention of distinct variates. In order to be empirically useful, each scale

Table 10. Factor Analysis of Ten Items Recommended for Final Scales (N = 286)[A]

Items[B]	Concern for Personal Safety	Perceptions of Crime	Avoidance of Street Crime
A. Concern for Personal Safety			
Concern about robbery	.511	.171	.228
Concern about assault	.591	.033	.271
Afraid of robbery	.908	.006	-.037
Afraid of assault	.959	-.018	-.065
B. Perception of Crime			
Frequency of local robbery	.114	.675	.023
Frequency of local assault	-.069	.845	-.048
Estimate of local crime rate	.008	.702	.039
C. Avoidance of Street Crime			
Avoid certain areas	.015	.033	.809
Avoid certain people	.027	.051	.694
Walk only on certain streets	-.016	-.044	.704

[A] Factor pattern matrix for oblique solution. The three factors accounted for 51, 13.3, and 9.9 percent of the variance respectively. Factor pattern correlations were: $F_1F_2 = .53$; $F_1F_3 = .64$; $F_2F_3 = .48$.

[B] See Appendix A or the Summary/Conclusions for exact question wording.

must measure something unique, as indicated by its correlates. These relationships were identified above in establishing the construct validity of each scale. However, here we review those same results comparatively. The most apparent differences are related to the perceptions of crime scale. While the other two scales were related to both sex and age, perceptions of crime was related to neither of these personal characteristics. In addition, it is responsive to ecological variations and prior robbery, as well as conducive to a consequent concern for personal safety and behavioral modifications. These findings are supportive of the nonevaluative definition of this scale. It appears to be a measure of beliefs about the amount of crime in the respondents' neighborhood devoid of any evaluation or interpretation of the significance of these beliefs to the individual.

Within the framework of stress theory, both concern for personal safety and avoidance of street crime may be viewed as the consequences of an assessment of the environment in terms of a threat to personal safety. As such, they are simply affective and behavioral manifestations of the same interpretive process, with the former preceding and guiding the latter. This similarity is reflected in their correlates. With the exception of prior robbery victimization, both exhibit the same pattern of significant correlates. As indicated earlier, this differential impact of robbery may be due to the adoption of different behavioral strategies by robbery victims. An additional effect concerns the strength of the relationships between concern for personal safety, avoidance of street crime and the remain-

ing variables. In every case, concern for personal safety was more closely related to the other variables than the avoidance of street crime scale, therby supporting the theoretically more central and proximate position of the former variable.

DISCUSSION/CONCLUSIONS

This research has demonstrated the multidimensionality of the fear of crime construct. The term has been used to refer to a broad spectrum of opinions, beliefs, feeling, and behaviors. This study has identified three distinctive components of this issue. First, "perceptions of crime" refers to knowledge or beliefs about the amount of crime in the respondent's immediate environment. The second "concern about personal safety", involves an evaluation of the threat posed by crime in personal terms. The third component "avoidance of street crime" involves behavioral adaptations which are easily implemented and do not require major changes in personal activities. Together these three dimensions suggest that we must either reconsider fear of crime as a multidimensional construct or because of the widespread popular and political usage of the term simply abandon it in favor of the derived components.

The identification of several basic dimensions within the fear of crime area also offers the possibility of a significant advance in our theoretical understanding of the problem. Prior authors, employing an unidimensional approach to fear of crime, have suffered from an inability to integrate their research in this area with any broader

theoretical framework. The result has been an isolated body of literature with little relevance to broader social psychological issues. However, it will be suggested below that this multidimensional view of fear of crime can easily and productively be integrated into stress theory.

As developed by Lazarus (1966), stress situations involve three basic elements: the presence of a simulus event, as assessment of the stimulus as threatening, and emotional and behavioral reactions designed to cope with the subjectively defined danger. Within this framework, threat and the associated responses do not derive directly from the situation, but rather, are the result of what Lazarus terms primary and secondary appraisal. Critical to this approach is a distinction between the simple perception of a stimulus situation and the assessment of this situation in personal terms:

> For threat to occur, an evaluation must be made of the situation, to the effect that a harm is signified.... The appraisal of threat is not a simple perception of the elements of the situation, but a judgment, an inference in which the data are assimilated to a constellation of ideas and expectations....The mechanism by which the interplay between the properties of the individual and those of the situation can be understood is the cognitive process of appraisal, a judgment about the meaning or future significance of a situation based not merely on the stimulus, but on the psychological makeup (Lazarus, 1966:44).

The extent to which a given environmental cue will produce threat is dependent upon a complex process of interpretation and evaluation. Secondary appraisal involves a similar evaluative process directed toward an appropriate behavioral response which is based upon the primary appraisal of threat and interpretations of appropriate res-

ponses. Given this appraoch, it becomes clear that a given stimulus may evoke a variety of affective responses and an even broader variety of coping behaviors, depending upon the individual's assessment of the situation.

The three basic dimensions of fear of crime identified here are easily assimilated into this perspective with a consequent clarification of the substantive nature of each component. First, "perceptions of crime" can be seen as corresponding to simple perceptions of the environmental stimulus. These perceptions involve beliefs about both the extent and nature of crime in the local environment, as well as "signs of disorder" (see Skogan & Maxfield, 1981). The phenomena to be included would be perceptual and nonevaluative. This suggests that operational measures of this component should not include items which require an interpretation or evaluation of the personal significance of the environment. Thus, excluded from this category would be subjective estimates of risk (cf., Fowler et al., 1979) and questions involving the definition of crime as problematic (cf., Baumer, 1980; Skogan & Maxfield, 1981). This is not to say that these measures have no use, but only that they are inappropriate indicators of this class of phenomena.

Second, "concern for personal safety" can be viewed as the emotional product of the appraisal of threat. This involves an assessment and definition of the situation in terms of the threat to personal safety or welfare. While this assessment may be based in part upon cold perceptions, it is primarily a function of social definitions, prior learning, and individual characteristics. Included in

this category would be all types of assessments which involve the personalization of threat, such as, estimates of risk (Furstenburg, 1971), feelings of personal safety (Hindelang et al., 1978), or worry about victimization (Fowler et al., 1979).

Finally, behavioral adaptations may be viewed as actions designed to cope with the defined threat. Because coping behavior is also the result of an assessment process, one should not expect a one-to-one correspondence between behavior and emotional responses. It should also be noted that neither the definition of threat nor coping behavior need be accurate, from an objective point of view. This category of actions would contain a wide variety of goal behaviors intended to reduce the threat of victimization.

The above discussion suggested that the "fear of crime" literature may be usefully viewed as illuminating the various components of a stress reaction. From this perspective, crime represents a potential environmental stressor. Its significance is evaluated in terms of the amount of threat, and individual reactions are viewed as strategies designed to cope with, or reduce the threat. From this view, perceptions of crime and behavioral adaptations are defined as determinants or consequences of assessments of personal safety. While the three are interrelated, they represent theoretically distinct constructs and the failure to treat them as such has serious implications for both public policy and academic research.

FOOTNOTES

1. The Rasch modelling was performed by Ben Wright, Geoffrey Masters and their associates at the University of Chicago and generally produced results parallel to the Guttman analysis.

2. This set of items was inadvertently deleted from the "test/retest file." Thus, no information concerning the stability of this index could be derived.

3. The reason we expected the Protection Against Home Invasion scale to be less affected by the antecedent conditions than the Avoidance of Street Crime scale is that the latter scale contains the same street offenses and situations as the Perceptions of Crime scale. The Home Invasion scale focuses on protective measures to prevent access to one's home. In general, this prediction was supported.

4. It may be noted that Cattell's scree test (1966) which is a more appropriate indicator of the number of factors with a small number of items, would also indicate a three factor solution.

REFERENCES

Andrich, D.
1978 "A rating formulation for ordered response categories." Psychometrika 43:561-573.

Baumer, Terry L.
1978 "Research on fear of crime in the United States." Victimology: An International Journal 3:254-264.

1979 "The dimensions of fear of crime." Northwestern University, Center for Urban Affairs, Working Paper M3-F.

1980 Personal Protective Behaviors and the Threat of Crime: A Comparative Analysis. Ph.D. dissertation, Department of Sociology, Loyola University of Chicago.

Baumer, Terry L. and Frederic DuBow
1977 "Fear of crime in the polls: What they do and do not tell us." Presented at the annual meeting of the American Association for Public Opinion Research, Buck Hill Falls, PA, May 20-22.

Baumer, Terry L. and Dennis P. Rosenbaum
1980 "Measuring 'fear of crime'." Paper presented to Special National Workshop on Research Methodology and Criminal Justice Program Evaluation, Baltimore, Maryland, March 17-19.

Biderman, Albert D., Louise A. Johnson, Jennie McIntyre, and Adrianne W. Weir
1967 Report on a Pilot Study in the District of Columbia on Victimization and Attitudes Toward Law Enforcement, Field Surveys. I. The President's Commission on Law Enforcement and Administration of Justice. Washington: U.S. Government Printing Office.

Campbell, Donald T. and D.W. Fiske
1959 "Convergent and discriminant validation by the multitrait-multimethod matrix." Psychological Bulletin 56:81-105.

Conklin, John E.
1975 The Impact of Crime. New York: Macmillan Publishing Co.

Crano, W.D. and M.B. Brewer
1973 Principles of Research in Social Psychology. New York: McGraw-Hill.

Cronbach, Lee J.
1951 "Coefficient alpha and the internal structure of tests." Psychometrika 16:297-334.

DuBow, Frederic, Edward McCabe, and Gail Kaplan
1978 Reactions to Crime: A Critical Review of the Literature. Reactions to Crime Project, Center for Urban Affairs, Northwestern University.

Fowler, Floyd J., Jr., Mary Ellen McCalla, and Thomas W. Mangione
1979 Reducing Residential Crime and Fear: The Hartford Neighborhood Crime Prevention Program. Washington: U.S. Government Printing Office (027-000-00877-1).

Furstenberg, Frank, Jr.
1971 "Public Reactions to Crime in the Streets." The American Scholar, 11:601-610.

1972 "Fear of crime and its effects on citizen behaviors." in Albert Biderman (ed.), Crime and Justice: A Symposium. New York: Nailburg.

Gorden, Raymond
1977 Unidimensional Scaling of Social Variables: Concepts and Procedures, New York: The Free Press.

Heise, David R.
1969 "Separating reliability and stability in test-retest correlation." American Sociological Review 34:93-101.

Hindelang, Michael, Michael Gottfredson, and James Garofalo
1978 The Victims of Personal Crime: An Empirical Foundation for a Theory of Personal Victimization. Cambridge, Massachusetts: Ballinger.

Kleinman, Paula H. and Debora S. David
1972 "Protection against crime in a ghetto community." The Addiction and Treatment Corporation Evaluation Team, Columbia University School of Social Work (unpublished).

Lavrakas, Paul J.
1979 "The Measurement of Property Protection Behavior." The Bellringer: A Periodic Review of Criminal Justice Evaluation 12:11-13.

Law Enforcement Assistance Administration
1978 LEAA Two-Year Evaluation Plan. (FY '79 - FY '80). Office of Planning and Management, Law Enforcement Assistance Administration.

Lazarus, Richard S.
1966 Psychological Stress and the Coping Process. New York: McGraw-Hill.

Leventhal, Howard
1974 "Emotions: A Basic Problem for Social Psychology." Pp. 1-51 in Charlan Nemeth Social Psychology: Classic and Contemporary Integrations. Chicago: Rand McNally.

McIntyre, Jennie
1967 "Public attitudes toward crime and law enforcement." The Annals of the American Academy of Political and Social Science 374:34-36.

McPherson, Marlys and G. Silloway
1980 Program Models: Planning Community Crime Prevention Programs. Minneapolis, MN: The Minnesota Crime Prevention Center.

Novick, M.R. and C. Lewis
1967 "Coefficient alpha and the reliability of composite measurements." Psychometrika 32:1-13.

Nunnally, Jim C. and Robert L. Durham
1975 "Validity, reliability, and speical problems of measurement in evaluation research." Pp. 289-352 in Elmer L. Strueuing and Marcia Guttentag (eds.) Handbook of Evaluation Research, Volume I. Beverly Hills: Sage.

Plutchik, Robert
1980 "A Language for the Emotions." Psychology Today 13:68-78.

President's Commission on Law Enforcement and Administration of Justice
1967 The Challenge of Crime in a Free Society. Washington, D.C.: Government Printing Office.

Rosenbaum, Dennis P. and Terry L. Baumer
1980 Interim Report: Measuring Fear of Crime. Westinghouse Evaluation Institute report submitted to the Office of Research and Evaluation Methods, National Institute of Justice, U.S. Department of Justice (grant number 79-NI-AX-0124).

Rossi, Peter H. and Howard E. Freeman
1982 Evaluation: A Systematic Approach (2nd edition). Beverly Hills, Ca: Sage.

Skogan, Wesley
1980 "The Center for Urban Affairs random digit dialing telephone survey." Pp. 175-225 in Albert Hunter and Michael Maxfield (eds.) Volume IV: Methodological Overview of Reactions to Crime Project. Northwestern University, Center for Urban Affairs. Report submitted to National Institute of Justice, U.S. Department of Justice

Skogan, Wesley and Michael G. Maxfield
1981 Coping with Crime: Individual and Neighborhood Reactions. Beverly Hills: Sage.

Sparks, Ricard F., Hazel G. Genn, David J. Dodd
1977 Surveying Victims: A Study of the Measurement of Criminal Victimization, Perceptions of Crime, and Attitudes to Criminal Justice. New York: John Wiley.

Steeh, Charlotte G.
1981 "Trends in nonresponse rates, 1952-1979." Public Opinion Quarterly 45:50-57.

END