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# In Search of Altruistic Community: Patterns of Social Support Mobilization Following Hurricane Hugo[1]

**Krzysztof Kaniasty**[2]
*Indiana University of Pennsylvania*

**Fran H. Norris**
*Georgia State University*

*Twelve months after Hurricane Hugo, 1,000 disaster victims and nonvictims were asked about social support they exchanged following the hurricane. Victims of disaster received and provided very high levels of tangible, informational, and emotional support. Disaster exposure (loss and harm) was a strong predictor of help received and a modest predictor of help provided. However, postdisaster help was not distributed equally and disaster exposure was more strongly related to social support in some groups than in others. Race, education, and age most consistently moderated the impact of disaster exposure on receipt of postdisaster support. Blacks and less educated victims received less help than similarly affected victims who were white or more educated. Relative disadvantage of being old in receiving support was not the case for those elderly disaster victims who experienced threats to their lives or health. Some subgroups of victims were relied upon disproportionately for providing assistance. Implications for social support research are addressed.*

**KEY WORDS:** social support; helping behavior; disasters; major life events; traumatic stress.

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[2]All correspondence should be addressed to Krzysztof Kaniasty, Department of Psychology, Indiana University of Pennsylvania, Indiana, Pennsylvania 15705.



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The beneficial role of social support as a protective resource in times of stress has been well established. Over the years, a greater part of empirical and theoretical work in this area concentrated on the *perceived* (cognitive, intrapersonal) aspects of support, leaving the *received* (actual, interpersonal) aspects of social support largely under-researched. In fact, the beneficial properties of social support have been most consistently shown to be contingent not so much upon the actual supportive exchanges as upon the mere perceptions that, if needed, support would be available (see for reviews, Barrera, 1986; Cohen, 1992; Dunkel-Schetter & Bennett, 1990; Kessler & McLeod, 1985; Vaux, 1988). Nevertheless, both theoretical and commonsense notions explaining ways in which perceived social support operates to promote adaptive coping are, explicitly or implicitly, assuming that some forms of actual helping (received support) have materialized (see Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993; Gore, 1985). Thus, to fully understand processes through which different manifestations of social support influence mental and physical health, more attention should be paid to the most basic expressions of support, that is, receiving and providing help at times when it is needed.

## SUPPORT MOBILIZATION IN THE CONTEXT OF DISASTER

The purpose of the present study was to examine the levels and predictors of receiving and providing social support following a natural disaster. It is clearly important to examine naturally occurring helping behaviors in settings where many people experience a single traumatic event and the need for support is undoubtedly very high. Social support literature has long recognized a wide variety of factors determining social support exchanges. Yet, across a number of literature reviews, three broad categories of factors that influence support receipt and provisions are mentioned most consistently: the stressor characteristics, the person characteristics, and the unique ecological context of support exchanges (e.g., Cohen, 1992; Dunkel-Schetter & Bennett, 1990; Dunkel-Schetter & Skokan, 1990; Eckenrode & Wethington, 1990; I. G. Sarason, Pierce, & Sarason, 1990; Vaux, 1988).

### *The Stressor*

The disaster under investigation is Hurricane Hugo, a Category 4 hurricane that devastated large areas of North and South Carolina on Sep-

tember 22, 1989. Hurricane Hugo, the most serious disaster to occur in this area of the country in modern times, resulted in 33 deaths and over 5 billion dollars of property damage in both states. In South Carolina alone, more than 64,000 people had to find temporary shelter. Fortunately, the hurricane was preceded by a substantial warning period that precluded higher incidence of injury or death. However, the force of the storm was such that most attempts to protect property were in vain.

Natural disasters are a good arena for studying helping behavior because many of the collateral factors that complicate help receiving and providing may be less potent than in other contexts. Usually sudden, unambiguous, and visibly distressing, disasters should invoke high levels of unsolicited helping. Receiving help may not be self-esteem threatening, because social comparison processes enable victims to discover that many others share the same fate. Recipients and providers are likely to appraise the stressor in a similar way, which could secure the match between what is needed and what is provided. Because they are generally unpredictable and uncontrollable events that assault a variety of valuable assets, disasters specifically call for tangible, informational, and emotional support.

The severity of experienced stress, often considered as an index of *relative needs* for support, should be most reliably related to the quantity of help received (e.g., Barrera, 1986; Dunkel-Schetter, Folkman, & Lazarus, 1987; Hobfoll & Lerman, 1989). In previous studies, the extent of losses incurred from disasters has consistently predicted support received from different sources (Bolin, 1982; Drabek & Key, 1984; Kaniasty, Norris, & Murrell, 1990; Solomon, 1986). How does stress severity as experienced by victims relate to providing help? The answer is not instantly apparent but studies indicate that receiving and providing support are strongly associated with each other (e.g., Antonucci & Akiyama, 1987a). Especially in a disaster context where both recipients and providers are victims themselves, there is a clear need to rely on each others' efforts and reciprocity. Thus, providing support could also be related to the stressor severity.

### *Person Characteristics: Recipients and Providers*

Empirical and common observations alike suggest that irrespective of needs, certain people have a relative advantage in receiving support. In light of Hobfoll's (1988) conservation of resources theory (COR), the relative advantage in mutual helping is important because greater levels of aid from others should protect victims against further loss of coping resources.

On the other hand, inadequate helping resources render some victims even more vulnerable to additional losses (Hobfoll & Lilly, 1993). The present study focuses on the role of resources afforded to victims by their sociodemographic status. Basic attributes such as race, sex, age, marital status, and education "are associated with differential exposure to structural barriers and opportunities in society which may, in turn, shape social relationship structures and processes" (House, Umberson, & Landis, 1988, p. 311). Consequently, there is some evidence that female, married, more educated, and younger persons generally receive more support than male, unmarried, less educated, and older persons (e.g., Antonucci, 1985; Eckenrode, 1983; Kaniasty et al., 1990; Rosario, Shinn, Morch, & Huckabee, 1988; B. R. Sarason, Shearin, Pierce, & Sarason, 1987; Stokes & Wilson, 1984; Vaux, 1988). Likewise, providing support is influenced by sociodemographic characteristics. Women routinely provide more support than men (Antonucci, 1985; House et al., 1988; Kessler, McLeod, & Wethington, 1985; Vaux, 1988); provisions of support generally decline with age (Antonucci & Akiyama, 1987b); socioeconomically disadvantaged and minorities are overburdened and may not be able to provide ample support (Eckenrode & Wethington, 1990; House et al., 1988; Vaux, 1988).

### *The Ecological Context*

A combination of stressor characteristics and person characteristics often creates a unique context for support exchanges. In addition, societal, group, and relationship norms or standards may differentially apply across helping situations. Researchers studying public responses to disasters such as hurricanes, floods, or earthquakes have often described an outpouring of immediate mutual helping in affected areas and communities. These emergent collective entities, loosely labeled as "altruistic" or "therapeutic" communities, are characterized by higher than usual levels of communal fellowship, cooperation, altruism, and solidarity (e.g., Barton, 1969; Fritz, 1961; Giel, 1990). Many observers have claimed that in such states of emergency consensus, the experience of the same fate "increases identification among victims, and previous class, race, ethnic, and social class barriers temporarily disappear" (Eranen & Liebkind, 1993, p. 958). Media accounts of disasters continuously provide vivid examples of such spontaneously occurring humanitarianism. Whereas mutual helping behavior is clearly abundant in the immediate aftermath of disastrous events, expressions such as "altruistic community" may inadvertently obscure the fact that not all of the victims are, in fact, equally involved in such helping collectives. Because the number of victims is potentially great, the need

may soon exceed the availability of helping resources, leaving some victims with needs unfulfilled. It is then that the rule of *relative needs* meets the rule of *relative advantage*.

Prior research on disasters has identified subgroups of victims that are consistently excluded from burgeoning altruistic communities. Black, older, or less educated victims often experience a *pattern of neglect* in that they receive less help following disasters than comparably affected white, younger, or more educated victims (e.g., Bolin & Bolton, 1986; Kilijanek & Drabek, 1979). In our prior research project with elderly victims of severe flooding in southeastern Kentucky, an impoverished area of Appalachia, we found that the victims received little help, much less than what they expected to receive prior to disasters (Kaniasty et al., 1990). These older victims also reported subsequent declines in perceived social support. Such deterioration of support was one path through which the disaster exerted its negative effects on mental health (Kaniasty & Norris, 1993). Thus the loss of social support led to more extreme consequences (cf. Hobfoll, 1988).

On the other hand, societal norms of aiding the most needy (e.g., Berkowitz, 1972), norms of long-term reciprocity (e.g., Antonucci & Jackson, 1990), and norms of filial responsibility (e.g., Seelbach & Sauer, 1977) could operate to overcome possible patterns of neglect. If so, there may also be *patterns of concern* for victims who are perceived as most vulnerable and at risk, such as young children, the ill, or the very old.

Finally, are there groups more likely to be called upon to provide help in the aftermath of disasters? We hypothesized that victims would be drawn into greater levels of helping because of their interdependence. Although women, younger persons, and the more economically advantaged routinely provide greater levels of assistance, the unique context of natural disaster could create special demands on those victims whose skills and resources match the immediate needs. Thus possible *patterns of recruitment* may involve some members of the community disproportionately because their expertise and resources bring relief to other victims.

In summary, the aim of the present study was to examine three general questions. First, did Hurricane Hugo instigate the emergence of an "altruistic community" characterized by higher than usual levels of receiving and providing different types of help? Second, disaster victimization aside, who were the persons more likely to receive and provide social support? And third, were there differential patterns of participation in the postdisaster helping community. These issues are addressed using a large and heterogenous sample: half female, half African American, and evenly divided among younger, middle-aged, and older adults.

## METHOD

### Participants

A sample of 1,000 adults (250 each) was drawn from Charleston, South Carolina, Greenville, South Carolina, Charlotte, North Carolina, and Savannah, Georgia. Charleston and Charlotte were chosen because both cities were actually struck and damaged by Hurricane Hugo. Neither Savannah nor Greenville were stricken by the hurricane, although Savannah did experience a substantial period of threat and evacuation prior to the storm.

In the first phase of the sampling procedures, 6 weeks after Hugo, the investigators toured the peninsula (urban area) of Charleston and selected three census tracts for the inclusion in the study. Criteria for selecting the three tracts were that the hurricane damage should still be evident and that they would represent a reasonable cross-section of the city's residents in terms of economic status and race. The investigators then toured the remaining three cities and selected neighborhoods of similar economic and demographic character as the Charleston tracts. In Charlotte, the other city stricken by Hugo, neighborhoods also were selected on the basis of damages sustained in the disaster. As judged by the quality of housing (see below), differences in economic status between selected neighborhoods within each city were similar across the four cities. Generally, within each city, one neighborhood was predominately of middle to upper-middle socioeconomic status (SES), one was predominately middle class, and one was predominately poor. These economic differences were paralleled by racial composition of the neighborhoods. Neighborhoods of higher economic status were primarily occupied by whites, whereas for the most part, the poor and middle class neighborhoods were occupied primarily by blacks. Thus the sample from each city was economically and racially diverse. However, specific neighborhoods were basically homogenous, a pattern consistent across the four cities as well as consistent with the reality of economic and racial stratification of American society.

The interviews were conducted in the respondents' homes in the Fall of 1990, 1 year following Hurricane Hugo. For comparison purposes and to keep the samples from each city as similar as possible, a nonprobability quota-sampling strategy was used. Interviewers were provided with maps and a starting point for the selected neighborhoods as well as with explicit instructions about the characteristics of the individuals that they were expected to interview. The neighborhoods were visited at different times of the day and night and on different days of week so that people with different lifestyles and schedules would be found. Limits were placed on the number of interviews that could be obtained in any one block, and only

one interview was allowed per household. In the end, this strategy provided a sample composed of approximately equal numbers of blacks and whites, men and women, and younger (18–39), middle-aged (40–59), and older persons (60+). Within certain limits of tolerance, the quota was fully balanced so that the age groups have comparable proportions of each sex–race combination. This deliberate sampling for heterogeneity insured that all population subgroups were involved in the study, including those known to be most difficult to find (e.g., middle-age men, older minorities).

To obtain a sample of 1,000 it was necessary to approach 1,404 persons (response rate = 71%). Of the 404 persons who refused to participate, a sizable percentage (13%) did so for reasons related to health or distress, but the most common reason for refusal was simply disinterest (83%). When a person selected for a quota sample refuses, he or she is replaced with someone else of the same "characteristics." In context of the present sampling strategy a respondent replacing a refusing person was someone of the same neighborhood, race, sex, and age. This procedure does not preclude the occurrence of selection effects but should limit them.

Differences between respondents and refusers were tested using an 8-item index of housing quality ($\alpha = .95$). This scale was completed by the interviewer based on external features of the dwelling (e.g., appearance of roof), and thus was independent of selected individuals' willingness to cooperate. In an analysis of variance, refusers (coded 0) did not differ from respondents (coded 1) on this measure ($F < 1$). The comparability between refusers and respondents held for all subsamples, as indicated by tests of interactions between response and the variables of sex, race, age, and city. Thus, the sample and subsamples are generally representative of the persons who were contacted concerning study participation.

We sampled from different cities to maximize variability on important variables. However, we make no claim that our subsamples are representative of their particular geographic populations. Consequently, the analyses presented below do not involve contrasts between disaster stricken and unstricken communities. All data used in the present analyses were collected at the individual level. The purpose of the study was to identify individual differences in received and provided social support in the context of extreme community stress.

## Measures

### *Disaster Impact*

Contemporary approaches to the study of stress broadly conceptualize losses incurred from stressful events as spanning across a variety of life

domains (Hobfoll, 1988). The stress of disasters is multifaced and disaster victims experience a multitude of losses in valuable resources that impact their psychological functioning (Freedy, Shaw, Jarrell, & Masters, 1992). The present study assessed disaster impact in terms of both loss (property damage or other financial or personal losses) and harm (injury or threat). Previous theoretical (e.g., Green, 1993) and empirical (e.g., Thompson, Norris, & Hanacek, 1993) work has established that loss and harm are conceptually distinct aspects of exposure to traumatic events. Our measure of *disaster loss* was based on a single item which read, "Which of the following statements best describes the total impact of Hurricane Hugo on your own property and belongings?" It was scored on a 5-point scale, from 0 (*none*) to 4 (*enormous*). This measure has been shown to be a strong predictor of various psychological consequences of another natural disaster (Kaniasty & Norris, 1993; Phifer & Norris, 1989) and to have high test–retest reliability over 9 months (Norris & Kaniasty, 1992). Because of smaller numbers of respondents in higher loss groups, we recoded this measure into three categories: 0 (*no loss*, $n = 519$); 1 (*low loss*, little and some loss combined, $n = 326$); and 2 (*high loss*, much and enormous loss combined, $n = 151$). *Disaster harm* (absent = 0, $n = 755$; present = 1, $n = 245$) was assessed by two questions pertaining to disaster-related injuries and perceptions of life threat during the hurricane. These measures of disaster impact correlated .61 with each other.

### *Person Characteristics and Control Variables*

Five predictor variables were examined. The demographic variables were race (white = 0, $n = 498$; black = 1, $n = 502$), sex (male = 0, $n = 475$; female = 1, $n = 525$), marital status (unmarried = 0, $n = 516$, married = 1, $n = 484$), age, scored in years ($M = 48.4$, $SD = 18.0$), and education, also scored in years ($M = 12.4$, $SD = 3.5$).

Two statistical control variables were used in all analyses. Network size ($M = 11.5$, $SD = 2.5$) was the sum of four items, each scored on a 4-point scale, about the respondent's relatives, friends, and neighbors. Life events ($M = 1.8$, $SD = 1.8$) was the number of other life events occurring in the year preceding the hurricane and included desirable (e.g, marriage), undesirable (e.g, death in family), and potentially traumatic events (e.g., criminal victimization). In effect, both network size and life events served as control variables to account for their positive associations with exchanges of help (see Barrera, 1986). Their inclusion in predicting help received and provided allowed an assessment of the unique effects of disaster impact and demographic variables.

## *Social Support*

*Social Support Items.* The measures of social support were based on the Inventory of Socially Supportive Behaviors (ISSB; Barrera, Sandler, & Ramsay, 1981). The ISSB is a 40-item scale that assesses the frequency with which individuals have actually received specific supportive behaviors from the people around them. On the basis of previous research (Kaniasty & Norris, 1992) we originally had selected 12 ISSB items for inclusion in the present study, 4 items each relating to three types of received support: emotional support (expressions of *interest, assurance, affection,* and *closeness*), informational support (receiving *suggestion, feedback,* information to *understand* a situation, and information on *how-to-do* something), and tangible support (receiving *money, transportation, shelter,* or something else *other than money*). After pilot testing, we added four new items: receiving help with *cleaning* property, receiving *tools or equipment,* being helped with *meals or groceries,* and having someone *watch* children, pets, or belongings. The measures of provided support were created by changing the direction of the provision. For example, "Did anyone provide or help you with meals or groceries?" became "Did you provide or help anyone with meals or groceries?" All 32 items (16 items received, 16 provided) were scored on a 4-point scale: 1 (*never*), 2 (*once or twice*), 3 (*a few times*), 4 (*many times*).

Because the interviews took place one year following Hurricane Hugo, these exchanges of support were assessed retrospectively. For respondents in Charleston and Charlotte, the questions were introduced with the statement, "We are interested in learning about different activities that you were involved in after Hurricane Hugo struck. These questions will refer to a 2-month period of time, 1 year ago, between late September and late November 1989 or, in other words, between Hurricane Hugo and Thanksgiving Day." For respondents in Greenville and Savannah, this introduction read, "Many of my prior questions asked about your current feelings and social relationships. We are also very interested in how well people can remember things that happened to them in the past. The next set of questions will concern help you may have received or provided at this time last year. Thus I will be asking you questions about a 2-month period of time between late September and late November of 1989. To make it easier to recall this period of time, 1 year ago, we will refer to Hurricane Hugo as the beginning of the interval and Thanksgiving Day as the end of the interval." Respondents in all cities were then told, "Each question concerns a different activity that other people might have done for you or with you. These activities don't have to be connected to Hugo. We are interested in all your activities,

whatever the reason." Each question repeatedly reminded the respondent of this time frame by asking, for example, "In the time period between Hugo and Thanksgiving, did anyone help you with cleaning up or improving your property?"

Evidence for the reliability of these measures was provided by a separate pilot study (Norris & Kaniasty, 1992). In January 1990, a sample of 65 persons from the same neighborhoods in Charleston was interviewed. In October 1990, concurrent with the present study, 53 (82%) of these persons were reinterviewed and asked the same questions. There was some systematic bias in the delayed reports of received social support. At Time 2, which was conducted at the same time as the present study, respondents tended to remember having received more social support than they had reported at Time 1. A similar but nonsignificant trend was observed for provided support. Nonetheless, given the long interval between interviews (9 months), the test–retest correlations were quite high (.60 to .85). Thus, although sample means tended to be higher at Time 2, individuals within the sample tended to retain their same rank order.

*Social Support Scales.* The first set of analyses (Table I) used all social support items. For the analyses predicting different types of received and provided support, subscale scores were computed. Although our measure of received social support was based on the well-researched ISSB, its numerous revisions left it resembling the original very little. Therefore it seemed important to explore its construct validity. We subjected all 16 received support items to a maximum-likelihood factor analysis with a varimax rotation. Four factors were extracted. The first factor included all 4 items reflecting received emotional support. The second factor consisted of 4 tangible support items that, although broadly relevant to anyone, appeared highly matched to the needs of disaster victims (something other than money, tools/equipment, meals/groceries, cleaning help). The third factor included 4 items originally intended as indicators of informational support. Two additional items—"affection" and "other than money"—displayed secondary loadings on this factor. The fourth factor consisted of the four remaining tangible support items. Factor analysis of the 16 provided support items yielded a very similar solution. For the remaining analyses, we chose the first three factors and computed scale scores as sums of items weighted by their factor loadings. The reliabilities of these scales were high (emotional support received, $\alpha = .84$, provided, $\alpha = .86$; tangible support received, $\alpha = .77$, provided, $\alpha = .78$; informational support received, $\alpha = .80$, provided, $\alpha = .85$). There was a high degree of overlap between receiving and providing support as indicated by correlations between corresponding scales: emotional support, $r = .71$, tangible support, $r = .60$, and informational support, $r = .58$.

**Table I.** Quantity of Support Received and Provided by Disaster Impact[a]

| | Received Support | | | | Provided Support | | | |
|---|---|---|---|---|---|---|---|---|
| | Disaster loss: | | | | Disaster loss: | | | |
| | No | Low | High | *F* | No | Low | High | *F* |
| Cleaning help | 1.58[b] | 2.22 | 2.75[c] | 88.23[f] | 1.71[b] | 2.40 | 2.57 | 57.56[f] |
| Tools/equipment | 1.29[b] | 1.82 | 2.26[c] | 85.80[f] | 1.69[b] | 2.05 | 2.36[c] | 30.13[f] |
| Meals/groceries | 1.52[b] | 2.18 | 2.61[c] | 76.21[f] | 1.99[b] | 2.48 | 2.71[c] | 33.12[f] |
| Other than money | 1.43[b] | 1.98 | 2.39[c] | 70.50[f] | 2.06[b] | 2.38 | 2.70[c] | 23.17[f] |
| Shelter | 1.61[b] | 1.69 | 2.47[c] | 39.30[f] | 1.83[b] | 2.05 | 2.18 | 7.78[f] |
| Money | 1.23[b] | 1.29 | 1.61[c] | 18.37[f] | 1.67 | 1.49 | 1.77[c] | 5.86[e] |
| Suggestion | 1.71[b] | 1.81 | 2.26[c] | 16.88[f] | 2.09[b] | 2.30 | 2.57[c] | 13.33[f] |
| Info: how-to-do | 1.99[b] | 2.11 | 2.53[c] | 14.47[f] | 2.34[b] | 2.45 | 2.78[c] | 10.23[f] |
| Info: understand | 1.97[b] | 2.06 | 2.45[c] | 10.43[f] | 2.34[b] | 2.39 | 2.71[c] | 7.05[f] |
| Affection | 2.39[b] | 2.43 | 2.91[c] | 9.96[f] | 2.68[b] | 2.62 | 3.11[c] | 11.36[f] |
| Assurance | 2.66[b] | 2.71 | 3.05[c] | 7.02[f] | 3.04 | 2.98 | 3.27[c] | 4.56[d] |
| Interest | 2.93[b] | 3.11 | 3.26 | 6.65[f] | 3.21 | 3.22 | 3.38 | 2.08 |
| Transportation | 1.62[b] | 1.67 | 1.98[c] | 6.20[e] | 2.00[b] | 2.11 | 2.28 | 3.44[d] |
| Feedback | 1.46 | 1.36 | 1.64[c] | 5.65[e] | 1.86 | 1.66 | 1.87[c] | 4.61[e] |
| Closeness | 2.84 | 2.67 | 3.02[c] | 4.77[e] | 2.91 | 2.67 | 2.92[c] | 5.03[e] |
| Watch belongings | 1.85 | 1.73 | 2.06[c] | 4.27[d] | 1.89 | 1.81 | 2.18[c] | 6.17[e] |

[a]The entries are item means and univariate *F*s. Received support analysis: no loss, $n = 485$, low loss, $n = 304$, high loss, $n = 137$. Provided support analysis: no loss, $n = 493$, low loss, $n = 311$, high loss, $n = 141$.
[b]Nonvictims significantly different from both victim groups combined, $t > 1.96$.
[c]High-loss group significantly different from low-loss group, $t > 1.96$.
[d]$p < .05$.
[e]$p < .01$.
[f]$p < .001$.

## RESULTS

### Quantity and Types of Support Received and Provided

The first question about whether help was mobilized in the aftermath of disaster was examined using multivariate analysis of variance (MANOVA). MANOVA was used so that all 16 specific behaviors could be examined individually and as a set. In two MANOVAs conducted, disaster loss with its three levels (no loss, low loss, and high loss) was used as an independent variable. In one analysis, the 16 received support items were the dependent measures; in the other, the 16 provided support items were the dependent measures. Both multivariate tests of the effect of disaster loss were highly significant: received support, $F(32, 1814) = 14.53$, $p < .001$; provided support, $F(32, 1852) = 8.39$, $p < .001$.

Table I displays the means and univariate *F*s for each item in rank order of difference in receipt of these supportive acts across the three

groups. Three trends were apparent. First, between-group differences in receiving support were pervasive. The nature of the effect was such that victims received more support than nonvictims (on 13 helping behaviors of the 16 assessed), and high-loss victims received more support than low-loss victims (15 of 16 behaviors).

Second, tangible help was the most specifically relevant type of social support. In rank order of between-groups difference, the first 6 helping behaviors were all tangible support items, followed by a cluster of 3 informational support items. Following this was a cluster of 3 items from the emotional support subscale. Thus emotional support differed less among groups, although in absolute terms it was the most frequently received.

Third, the provision of support generally followed the same pattern as the receipt of support. In this case, 10 of 16 behaviors differed between victims and nonvictims and 12 of 16 behaviors differed between high-loss and low-loss victims. Apparently disaster victims do a great deal of providing as well as receiving support. Again, the tangible support items showed the greatest differences and the emotional support items showed the smallest differences, although in absolute terms emotional support was the most frequently provided by all groups.

### Predictors of Social Support and Patterns of Support Mobilization

The predictors of helping behavior and differential mobilization of support were examined using a series of hierarchical regression analyses. The six dependent variables were received and provided tangible, informational, and emotional support subscales. The hypotheses suggested that certain person characteristics would influence social support exchanges and, in addition, might moderate the effects of disaster loss or harm on received and provided support. Thus our interest was focused both on the main effects of person characteristics and on their interactive effects with the disaster impact measures. Prior to the actual regression analyses, we subjected the data matrix to a PRELIS procedure. PRELIS allowed us to use Pearson or polychoric correlations in the regression input matrix depending upon the variables' level of measurement. For ordinal data (e.g., sex, race, disaster loss) polychoric correlations are less biased than Pearson correlations (Jöreskog & Sörbom, 1989).

Because we had two disaster impact measures, all analyses were conducted twice, first using the disaster loss measure and then using the disaster harm measure. Each analysis proceeded as follows: First, we entered the disaster impact measure to assess the effect of disaster victimization on receipt or provision of social support. Then, we entered as a block the

five sociodemographic predictors (race, sex, age, marital status, and education) and two control variables (network size and life events). This step in the hierarchy allowed for the assessment of unique contributions (main effects) of person characteristics in predicting receiving and providing social support independent of each other's influence and the impact of disaster victimization. The inclusion of network size and prior life events controlled for their positive association with social support, thereby reducing the threat of confounding between these two variables and person characteristics. At the final stage of each regression we entered individually one of the interactions between the disaster impact measure and a particular sociodemographic characteristic. Each interaction was scored as the product of the mean deviations of the constituent variables. These interactions tested whether or not there was a differential mobilization of support in the aftermath of Hugo depending on characteristics of the victim. These interactions were tested separately so that their total contributions could be assessed regardless of the variance they might have shared with other interaction terms.

### *Predicting Received Social Support*

Table II presents the standardized regression coefficients from the analyses predicting received tangible, informational, and emotional support. To avoid redundancy, the betas for the main effects of two control variables and sociodemographic predictors are given based on the analyses that used disaster loss as the disaster impact measure. Altogether, in the analyses using disaster loss, the whole set of predictor variables, including the interactions, accounted for 39% of the variance (adjusted $R^2$) in received tangible support, 21% of the variance in received informational support, and 16% of the variance in received emotional support.

*Disaster Impact.* As Table II shows, both disaster impact measures had significant main effects on all three types of received support. Disaster loss and disaster harm were more strongly associated with tangible and informational support than with emotional support. Respondents who experienced greater disaster loss reported receiving more tangible support, $F(1, 942) = 372.71$, $p < .001$, informational support, $F(1, 942) = 55.92$, $p < .001$, and emotional support, $F(1, 942) = 15.47$, $p < .001$. Similarly, disaster harm, the presence of threat to life and health, mobilized greater levels of support of all types: tangible, $F(1, 946) = 197.81$, $p < .001$; informational, $F(1, 946) = 46.04$, $p < .001$; emotional, $F(1, 946) = 4.45$, $p < .04$.

*Network Size and Life Events.* As evident from Table II, across all three types of support, the receipt of social support was consistently related to

**Table II.** Predicting Received Social Support: Summary of Hierarchical Regression Analyses[a]

| Predictor | Received social support | | |
|---|---|---|---|
| | Tangible | Informational | Emotional |
| Loss | .53[e] | .24[e] | .13[e] |
| Harm | .42[e] | .22[e] | .07[c] |
| Network size | .17[e] | .20[e] | .26[e] |
| Life events | .06[c] | .09[d] | .06[c] |
| Race | -.19[e] | -.04 | .01 |
| Loss × Race | -.08[d] | -.07[c] | -.12[e] |
| Harm × Race | -.03 | -.05 | -.10[d] |
| Sex | .06[c] | .11[e] | .18[e] |
| Loss × Sex | -.01 | .00 | .00 |
| Harm × Sex | .00 | -.03 | .02 |
| Age | -.16[e] | -.21[e] | -.08[c] |
| Loss × Age | -.04 | -.02 | .01 |
| Harm × Age | .08[d] | .07[c] | .02 |
| Marital status | -.05 | .14[e] | .13[e] |
| Loss × Marital status | .06[c] | .01 | .05 |
| Harm × Marital status | .01 | -.02 | -.03 |
| Education | .00 | .06 | .09[c] |
| Loss × Education | .07[d] | .04 | .05[b] |
| Harm × Education | -.03 | -.02 | .07[c] |

[a]The entries are standardized regression coefficients. The betas for the main effects of two control variables and sociodemographic predictors are based on the analyses that used disaster loss as a disaster impact variable. Disaster loss analyses: no loss, $n = 486$, low loss, $n = 315$, high loss, $n = 143$. Disaster harm analyses: no harm, $n = 709$, harm, $n = 239$.

[b]$p < .09$.
[c]$p < .05$.
[d]$p < .01$.
[e]$p < .001$.

the two control variables, network size and life events. Respondents with larger social networks received more tangible help, $F(1, 935) = 42.43$, $p < .001$, informational help, $F(1, 935) = 46.17$, $p < .001$, and emotional help, $F(1, 935) = 68.31$, $p < .001$. Similarly, respondents who reported experiencing more life events in the year prior to Hurricane Hugo received greater amounts of social support: tangible, $F(1, 935) = 4.54$, $p < .04$; informational, $F(1, 935) = 8.91$, $p < .003$; emotional, $F(1, 935) = 3.95$, $p < .05$.

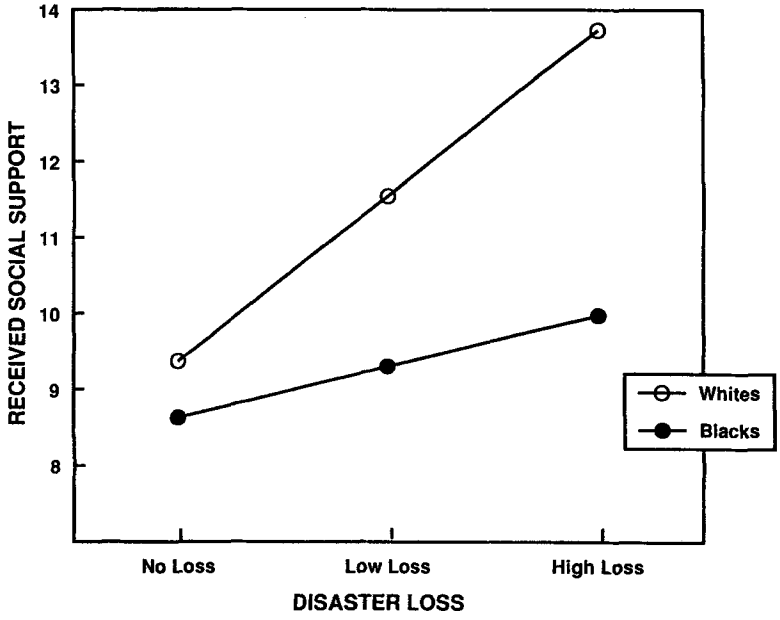


Fig. 1. Pattern of neglect: Received social support as a function disaster loss and race.

*Race.* Race had only one significant main effect. Whites reported receiving more tangible support than blacks, $F(1, 935) = 31.03, p < .001$. Race significantly interacted with disaster loss in predicting the receipt of all three types of social support: tangible, $F(1, 934) = 9.03, p < .003$; informational, $F(1, 934) = 5.01, p < .03$; emotional, $F(1, 934) = 15.32, p < .001$. Race also significantly moderated the impact of disaster harm on received emotional support, $F(1, 938) = 9.84, p < .002$. To interpret these interactions we repeated the regression analyses without the PRELIS procedure and plotted regression lines based on unstandardized betas (Aiken & West, 1991). To simplify the graphical presentation (Figure 1) of the three Loss × Race interactions we combined the received support subscales and regressed the obtained total score on all predictor variables. Among nonvictims, both races generally appeared to receive similar amounts of help, although there was a trend for whites to receive slightly more. However, among the low- and high-loss victims, whites received much more support than blacks. Thus disaster victimization augmented racial differences, suggesting that black victims experienced a pattern of neglect such that they received less tangible, informational, and emotional support than equally

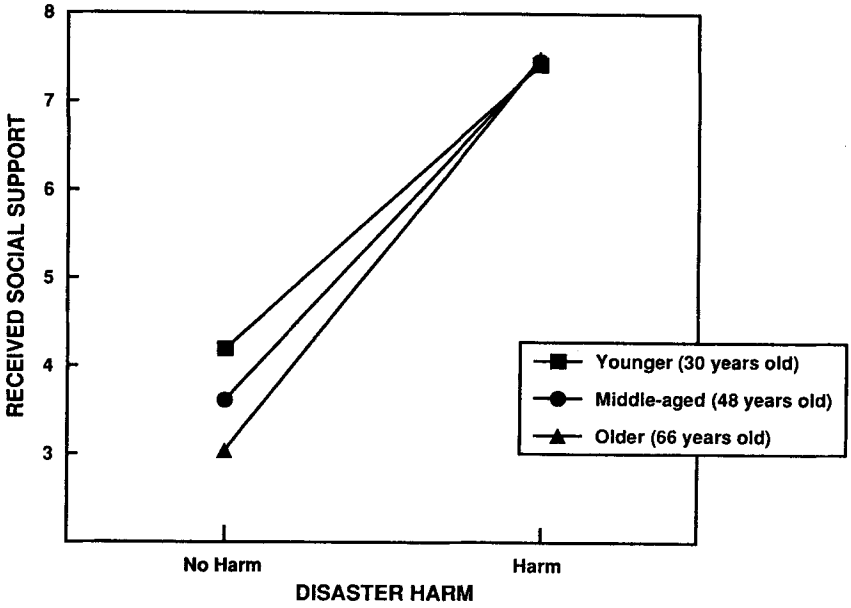


Fig. 2. Pattern of concern: Received social support as a function of disaster harm and age.

affected disaster victims who were white. The pattern of the Harm × Race interaction was similar. Admittedly, all these interactions were rather modest in size, but they were all consistent with theoretical predictions.

*Sex.* Respondents' gender was significantly associated with receipt of social support. Women received more tangible support, $F(1, 935) = 5.64$, $p < .02$, informational support, $F(1, 935) = 12.35, p < .001$, and emotional support, $F(1, 935) = 32.69, p < .001$. Sex did not moderate the relationship of disaster impact on receiving support.

*Age.* Age had strong main effects of on all three support measures. As age increased the reported amounts of received support decreased: tangible, $F(1, 935) = 31.63, p < .001$; informational, $F(1, 935) = 40.11, p < .001$; emotional, $F(1, 935) = 4.98, p < .03$. Age did not interact with disaster loss. However, age moderated the impact of disaster harm on receiving tangible support, $F(1, 938) = 9.18, p < .003$, and informational support, $F(1, 938) = 5.42, p < .02$. Figure 2 shows the form of these interactions with the outcome measures of tangible and informational support combined. Three regression lines across the two levels of disaster harm were plotted for three age categories based on the mean age value of 48 ± *SD* of 18.

This interaction did not resemble a pattern of neglect previously described: Rather, its form was more consistent with a pattern of concern. The effect of harm on tangible and informational support was especially pronounced among older respondents (66 years old and older). Although the support received by older victims never exceeded that of younger victims, the relative disadvantage of being old was not the case for those elderly who were harmed by disaster because they received levels of tangible and informational support equivalent to those of younger and middle-aged victims. Interestingly, the pattern of concern was observed for disaster harm but not for disaster loss.

*Marital Status.* As compared to the respondents who were not married, married respondents received more informational support, $F(1, 935) = 16.59, p < .001$, and emotional support, $F(1, 935) = 14.34, p < .001$. Marital status moderated the impact of disaster loss in predicting tangible support, $F(1, 934) = 6.10, p < .02$. Among nonvictims, unmarried people received more tangible support than married people. However, as disaster loss increased, married victims received more support than equally affected victims who were unmarried.

*Education.* Respondents' level of education had only one significant main effect. Respondents with greater educational attainment received more emotional support than respondents with less education, $F(1, 935) = 4.98, p < .03$. Education also moderated the relationship between disaster impact and receipt of support. The interaction between disaster loss and education was significant in predicting tangible support, $F(1, 934) = 6.56$, $p < .01$, and approached significance in predicting emotional support, $F(1, 934) = 2.98, p = .085$. The interaction between disaster harm and education on emotional support was also significant, $F(1, 938) = 5.60, p < .02$. Plots of the regression lines for these interactions resembled the synergistic effect depicted in Figure 1. Among nonvictims, respondents with different levels of education received similar levels of support. However, disaster victims with high (post-high school) and moderate (high school diploma) levels of education received more tangible and emotional support than equally affected victims who completed only the first 8 years of schooling. In spite of being modest in size, these data clearly suggest that victims with lower levels of educational attainment may have experienced a pattern of neglect.

### *Predicting Provided Social Support*

Table III presents the standardized regression coefficients from the analyses predicting provided tangible, informational, and emotional support. The betas for the main effects of two control variables and sociode-

**Table III.** Predicting Provided Social Support: Summary of Hierarchical Regression Analyses[a]

| Predictor | Provided social support | | |
|---|---|---|---|
| | Tangible | Informational | Emotional |
| Loss | .36[e] | .16[e] | .05 |
| Harm | .28[e] | .19[e] | .05[b] |
| Network size | .23[e] | .29[e] | .30[e] |
| Life events | .11[c] | .15[d] | .13[e] |
| Race | −.13[e] | .11[d] | .05 |
| Loss × Race | −.01 | .01 | −.03 |
| Harm × Race | −.03 | −.01 | .01 |
| Sex | −.02 | .02 | .18[e] |
| Loss × Sex | −.05[b] | −.03 | .05 |
| Harm × Sex | −.01 | −.02 | .04 |
| Age | −.19[e] | −.12[e] | −.04 |
| Loss × Age | −.09[d] | −.04 | −.01 |
| Harm × Age | .03 | .04 | .02 |
| Marital status | .06[b] | .08[c] | .13[e] |
| Loss × Marital status | .05[c] | .01 | .00 |
| Harm × Marital status | −.04 | .00 | .03 |
| Education | .06 | .22[e] | .08[c] |
| Loss × Education | .05[b] | .00 | .00 |
| Harm × Education | .00 | .01 | .03 |

[a]The entries are standardized regression coefficients. The betas for the main effects of two control variables and sociodemographic predictors are based on the analyses that used disaster loss as a disaster impact variable. Disaster loss analyses: no loss, $n$ = 492, low loss, $n$ = 317, high loss, $n$ = 146. Disaster harm analyses: no harm, $n$ = 723, harm, $n$ = 236.

[b]$p < .09$.
[c]$p < .05$.
[d]$p < .01$.
[e]$p < .001$.

mographic predictors are again based on the analyses that used disaster loss as the disaster impact variable. The whole set of predictor variables in the regressions using disaster loss accounted for 32% of the variance in provided tangible support, 24% of the variance in provided informational support, and 17% of the variance in provided emotional support.

*Disaster Impact.* As Table III shows, respondents who experienced greater disaster loss reported providing more tangible support, $F(1, 953) = 138.48$, $p < .001$, and informational support, $F(1, 953) = 23.94$, $p < .001$. Likewise, respondents who experienced disaster harm provided more

tangible support, $F(1, 957) = 81.61, p < .001$, and informational support, $F(1, 957) = 36.66, p < .001$. The effect of disaster harm on provided emotional support did not reach the .05 level of statistical significance, $F(1, 957) = 2.89, p = .09$. Thus, again, disaster loss and disaster harm were more strongly associated with tangible and informational support than with emotional support.

*Network Size and Life Events.* Providing social support was consistently and strongly related to network size and life events. Respondents with larger social networks provided more tangible help, $F(1, 946) = 66.88, p < .001$, informational help, $F(1, 946) = 96.31, p < .001$, and emotional help, $F(1, 946) = 95.63, p < .001$. Similarly, the number of life events prior to Hurricane Hugo was associated with greater amounts of providing tangible support, $F(1, 946) = 15.60, p < .001$, informational support, $F(1, 946) = 24.92, p < .001$, and emotional support, $F(1, 946) = 16.87, p < .001$. Many of the events that were assessed in the present study occurred to members of respondents' networks (e.g., illness or death of a family member or friend, having a grandchild), thus possibly created demands to provide supportive acts.

*Race.* Race had significant main effects on provided tangible and informational support. Whites provided more tangible support than blacks, $F(1, 946) = 14.45, p < .001$, but blacks provided more informational support than whites, $F(1, 946) = 8.79, p < .004$. There were no significant interactions between disaster impact and race.

*Sex.* Respondents' gender was significantly associated with providing emotional support. Not surprisingly, women reported providing more emotional help, $F(1, 946) = 32.52, p < .001$. The interaction between disaster loss and sex in predicting tangible support approached statistical significance, $F(1, 945) = 3.26, p = .07$. Among nonvictims, both sexes provided similar amounts of support but, among victims, men provided more tangible support than women.

*Age.* Age had strong main effects of on two provided support measures. Younger age was associated with providing more tangible support, $F(1, 946) = 38.71, p < .001$, and informational support, $F(1, 946) = 12.94, p < .001$. Age also moderated the impact of disaster loss on providing tangible support, $F(1, 945) = 10.65, p < .001$. Plotting this interaction revealed a synergistic effect: Disaster loss led to sharp increases in providing support among younger and middle-aged adults but did little to influence the amount of tangible help provided by the elderly. Evidently, the postdisaster helping community *recruited* younger victims to a greater extent than it recruited older victims for providing tangible support.

*Marital Status.* Married respondents provided significantly more informational support, $F(1, 946) = 5.69, p < .02$, and emotional support,

$F(1, 946) = 13.01, p < .001$, than unmarried respondents. Married people also reported providing somewhat more tangible support, $F(1, 946) = 3.49$, $p = .062$. Disaster loss interacted with marital status in predicting provided tangible support, $F(1, 945) = 3.95, p < .05$. The pattern of this moderating effect of marital status was similar to those described previously. As disaster loss increased, married victims became more involved in providing tangible support than victims who were unmarried.

*Education.* Respondents with more education provided more informational support, $F(1, 946) = 34.05, p < .001$, and emotional support, $F(1, 946) = 3.91, p < .05$, than respondents with less education. Education also moderated the relation between disaster loss and providing tangible support, $F(1, 945) = 3.63, p = .057$. Disaster victims with high school education or better were recruited to provide more tangible aid than victims with less education.

## DISCUSSION

Our investigation into helping behavior following a catastrophic event was designed to examine three general questions: (a) Did Hurricane Hugo instigate the emergence of an "altruistic community" characterized by higher than usual levels of helping behavior? (b) Disaster victimization aside, who were the persons more likely to receive and provide social support? (c) Were there differential patterns of participation in the postdisaster helping efforts?

### *The Rule of Relative Needs*

Victims of Hurricane Hugo reported receiving and providing substantial help in the first 2 months after the disaster. Thus Hurricane Hugo provides another example of an emergent helping community that is mobilized immediately after the impact to aid those needing assistance the most (Barton, 1969; Fritz, 1961; Giel, 1990). Across all analyses, the extent of disaster loss and harm was strongly associated with an increase in help received. The between-group differences were pervasive: Disaster victims received much more help than nonvictims, and high-loss victims generally received more support than low-loss victims. The importance of loss and harm in predicting the receipt of assistance is consistent with research indicating that the rule of relative needs, most often operationalized as the severity of an experienced stressor, guides exchanges of support within informal networks (Barrera, 1986; Bolin, 1982; Drabek & Key, 1984; Dunkel-

Schetter et al., 1987; Eckenrode & Wethington, 1990; Hobfoll & Lerman, 1989; Kaniasty et al., 1990; Solomon, 1986).

In the context of this natural disaster, tangible help was the most specifically relevant type of social support, followed by informational support. According to leading contemporary models of stress (Hobfoll, 1988; Lazarus & Folkman, 1984), the efficacy of social support is determined by the extent to which it functions to promote preservation or recovery of important physical and psychological resources necessary for successful adaptation. If social networks are to play their protective and restorative functions they have to provide resources that are both most affected by the event and needed for coping (Cutrona & Russell, 1990; Hobfoll & Lilly, 1993). For victims of a natural disaster the importance of tangible support seems obvious. Natural disaster is synonymous with destruction of the physical environment, loss of possessions, and depletion of material assets experienced by individuals and whole communities. Not surprisingly, then, victims with greater disaster losses were offered more assistance with cleaning their properties. People helped them with meals and groceries, and loaned them tools and equipment. These are all acts that are specific and well matched to the ecological demands of the event.

It might be noted that none of these items exhibiting the largest victim–nonvictim differences were originally present in our received support scale (based on the ISSB). We included these specific acts after the pilot study had indicated that the tangible support subscale with four generic items (shelter, money, other than money, and transportation) had no internal consistency, thus hinting at the possibility that we were not assessing behaviors most congruent with the particular needs of disaster victims (Norris & Kaniasty, 1992). Dunkel-Schetter and Bennett (1990) suggested that one of the reasons globally assessed received support often fails to exhibit stress-protective properties is because the variety of helping behaviors necessitated by specific contexts are not common and routinely exchanged (e.g., cleaning up property). Thus receipt of support is most beneficial under circumstances when specific demands and provisions are congruent with each other (see also Kaniasty & Norris, 1992; Schwarzer, Dunkel-Schetter, & Kemeny, 1994). This issue may be especially important for the measurement of tangible support which seems most dependent on stressor characteristics. On the other hand, the items assessing informational support and emotional support were general enough to fit most situations. It could be this characteristic of a generic fit that makes informational and emotional support frequent and useful in a variety of stressful conditions (Cohen & Wills, 1985; Cutrona & Russell, 1990).

Information and guidance were important for disaster victims because the situation induced immediate problems in need of solution. Victims need

to know where to turn for organized aid, how to protect their belongings and properties, how to start clean-up efforts, where to get needed tools, supplies, and insurance forms, and how to assess their emotions and coping efforts. Consequently, to assure a quick and speedy recovery victims are compelled to take charge and control over their circumstances. Informational support is particularly useful in situations where some aspects of the stressor are within the victim's control (Cutrona & Russell, 1990).

In absolute terms, emotional support was the most frequently exchanged type of support. Many studies have shown that persons subjected to a variety of stressful experiences routinely receive considerable testimonies of compassion, concern, empathy, and acceptance (Dakof & Taylor, 1990; Dunkel-Schetter et al., 1987; Lehman, Ellard, & Wortman, 1986). Being surrounded by those who are loving and understanding is imperative for disaster victims, many of whom have not only lost valuables of material, symbolic, or emotional significance but also have been exposed to death and injury (Green, 1993). However, victims were not as much different from nonvictims in receiving emotional support as they were in receiving tangible and informational support. Although not always delivered successfully, emotional support seems to be a ubiquitous entity, often appropriate, often readily available, and often desirable. Data in Table II indicate that receipt of emotional support was determined less by disaster impact and more by person characteristics than tangible and informational help. Apparently, people need emotional support at all times, whereas their need for tangible help and advice is determined more by circumstances. In their study of middle-age couples, Dunkel-Schetter et al. (1987) also found some evidence that person factors (e.g., self-esteem, religiosity) were associated with the receipt of emotional support, whereas stressors were most strongly associated with tangible support. In addition, because emotional support is communicated in routine daily contacts (Leatham & Duck, 1990) and thus generally expected irrespective of need, its presence could be assumed regardless of whether or not it actually occurred. This implies a possibility of a responding bias manifested in overly positive self-presentations (see Paulhus, 1991). On the other hand, it could be that measures of received emotional support evidence "ceiling effects." More research on these potential biases or measurement problems would be useful.

The provision of support generally followed the same pattern as the receipt of support. Although the differences were less strong and pervasive than those found for received support, and although there were fewer differences between high-loss and low-loss victims, the tendency of victims to have higher means than nonvictims remained. Interestingly, again in terms of absolute levels, emotional support was most frequently provided but levels of these provisions did not differ a lot between groups. This finding

lends further credence to our contention that emotional support is readily available and less dependent on situational context. Yet, victims consistently provided more tangible support to others than did nonvictims. They also provided more advice and information. Investigations of public responses to catastrophic events often speak of high levels of cooperation, mutual helping, and growth of internal solidarity. In fact, these mutual exchanges of help might be the most reliable manifestations of the common purpose and fellowship characteristic of altruistic or therapeutic community. Apparently, many victims of Hurricane Hugo participated in such a community by providing as well as receiving a great deal of support. Whereas the high correspondence between receiving and providing help (correlations between the two ranged from .58 to .71) is not at all unusual (e.g., Antonucci & Akiyama, 1987a), disasters provide a unique setting for such intense levels of reciprocity. The large number of potential helpers and providers are victims themselves, thus most of them necessarily have to rely on each other's supportive efforts. Repeatedly heard testimonials of victims about "their community being brought together" in the aftermath of a disastrous event may be based on such experiences. For many victims, being helped and helping others merge into a communal process aimed at restoring their psychological and physical equilibrium.

### *Relative Advantage and Patterns of Support Mobilization*

Besides relative need, what person characteristics affect the receipt of social support? Persons with larger networks consistently received more support (see Drabek & Key, 1984; B. R. Sarason et al., 1987; Stokes & Wilson, 1984). Women had an advantage over men in that they received more emotional and informational support, and to a lesser extent, more tangible support. These results are congruent with previous findings that similarly favor women, although primarily in the domain of emotional support (Rosario et al., 1988; Stokes & Wilson, 1984; Vaux, 1988). Married people received much more informational and emotional support than unmarried people. The advantage of being married in receiving social support is not surprising, considering that early research in this area often operationalized social support as having a spouse (see Vaux, 1988).

Race and education also influenced social support receipt. In general, blacks received less tangible support and persons with lower educational attainment received less emotional support. However, disaster exposure sharpened their relative disadvantage, resulting in a clear *pattern of neglect.* In the presence of disaster impact, black victims consistently received less tangible, informational, and emotional help than equally affected victims

who were white. Similarly, it appears that less educated persons who experienced disaster loss or harm also experienced neglect and received less tangible and emotional support than their more educated counterparts. Less pervasively, our data also suggest that disaster victims who were unmarried received proportionately less tangible support than victims who were married.

Although only modest in their magnitude, these findings gain a greater significance considering that they are not isolated incidents peculiar to the context of this disaster. Among victims of Hurricane Andrew (August 1992), blacks similarly reported receiving less help from informal support networks than whites (Kaniasty & Norris, 1994). Bolin and Bolton (1986) observed in their comprehensive examination of four natural disasters (tornado, flooding, hurricane, and earthquake) that struck four culturally and ethnically diverse sites (Texas, Utah, Hawaii, and California) that the poor and minorities had the greatest difficulties securing adequate assistance and recovering from disaster. Their disadvantaged life conditions were intensified further by the catastrophic event. Therefore, their chances for speedy recovery could have been hampered by their limited involvement in the postdisaster helping community.

Why do minorities and lower class persons not participate more fully in the emergent altruistic community? Is it because they were reluctant to seek help (e.g., Ball, 1983)? Is it because they were less efficacious in mobilizing or utilizing available resources (e.g., Eckenrode, 1983)? Is it because members of their networks had fallen prey to a diffusion of responsibility and assumed that help was already secured (e.g., Latane & Darley, 1970)? Possibly all of these and other psychological processes operate to exclude certain population subgroups from receiving greater levels of help. However, as suggested by Eckenrode and Wethington (1990), support mobilization processes are highly influenced by larger social forces that stand behind the immediate characteristics of individuals and their environments. Socially and economically disadvantaged groups are themselves frequently too overburdened to provide ample help to other members in times of additional need. Ability to develop and sustain thriving social support resources is hindered by their position in today's society. Reviewing the research of others, particularly Belle's (1982, 1983) studies with low-income women and Wilson's (1987) work on inner-city racial minorities, Eckenrode and Wethington pointed to clear patterns of exclusion of the underprivileged from employment, economic and political benefits, and social participation and organizations. Such marginalization undermines chances for disadvantaged members of society to have access to social networks capable of mobilizing adequately in times of great need (see also House et al., 1988). This lack of basic resources augments the risk for fur-

ther resource depletion (Hobfoll, 1988; Hobfoll & Lilly, 1993), thus rendering the poor and minorities less able to confront the many adversities in their lives. The bottom line is that postdisaster communities, when they arise, are not ruled in the most egalitarian way.

Victims' age was also associated with a differential receipt of social support following Hurricane Hugo. Our analysis indicates that older respondents who faced threats to their lives and health experienced a *pattern of concern*. Disaster harm reliably mobilized their social networks to provide them with levels of tangible and informational assistance usually reserved for younger victims. On the surface, these findings may seem inconsistent with other disaster studies suggesting that older victims routinely receive less support. In a study of a devastating tornado in Topeka, Kansas (1966), Drabek and Key (1984) found that families headed by persons over 60 years old received aid far less frequently than families headed by younger persons. They concluded that "elderly families simply did not participate as fully in the post-disaster therapeutic community as did the younger victims" (p. 100). In fact, it was this situation that inspired Kilijanek and Drabek (1979) to coin the term, pattern of neglect. The results of our prior study that examined received support among elderly flood victims also appeared consistent with this view (Kaniasty et al., 1990). A similar neglect of older persons has been observed across a variety of disaster sites, cultures, and helping provisions (Bolin, 1982; Bolin & Bolton, 1986).

In the present study, the interactions between disaster impact and age were significant only when the victimization exposure was operationalized in terms of harm. The pattern of concern did not emerge in response to property damage. Because disaster loss neither eliminated nor augmented age differences in receiving support, the strong main effects of age (see Table II), indicating an inverse relation between age and support receipt, remained unmodified. Thus these overall findings suggest a somewhat more complex pattern and call for interpretations that take the nature of the victimization into account.

In the context of disaster, when whole communities experience property destruction, tangible losses may not be salient cues of older persons' needs. In fact, because they usually reside in older, less expensive, but debt-free houses, the elderly might actually be perceived as needing less help than people in younger or middle-adulthood stages of life, whose losses could indeed have a greater monetary value (see Bolin & Bolton, 1986; Price, 1978). Consequently, with regard to property damage, older adults may suffer from a pattern of neglect. In contrast, health threats to older adults my be particularly salient to their social support networks because of assumed vulnerability of older persons in the domain of physical health (e.g., Murrell, Norris, & Grote, 1988). Thus the disadvantage of older age

in receiving help may be lessened, or even eliminated, in situations when the need for support is health related.

A special concern for older adults in the case of health crisis is a good illustration of Antonucci's life-span developmental model of social support exchanges (Antonucci, 1985; Antonucci & Akiyama, 1987b; Antonucci & Jackson, 1990). Antonucci used an analogy of social support as a "bank" to describe long-term reciprocity in helping transactions. Accordingly, "people maintain an ongoing account of the amount of support or various benefits they have given to and received from others" (Antonucci & Jackson, 1990, p. 178). Throughout their life, people make continuous "deposits" to the social support bank, particularly at the times when their resources are high, because then they can afford giving more than receiving (i.e., middle-aged adulthood). These deposited provisions create a "support debt" that can be withdrawn at a later time when the need is high but concurrently available resources are low (i.e., older age). A similar process of resource accumulation is an integral part of Hobfoll's (1988) conservation of resources theory postulating that people strive to acquire resource surpluses to be used in the event of need. Thus when the physical health of older people is threatened, those in debt to them reciprocate with greater concern and assistance. Given that it is these same traumatic stressors (injury, life threat) that have been shown to be most harmful to mental health (Green, 1993), older people may be fortuitously receiving the most timely and psychologically vital social support. This pattern of concern may explain why older disaster victims are typically at less risk for poor psychological outcomes than middle-aged and younger victims (Thompson et al., 1993).

Our findings concerning provided social support suggest that some people generally provide more help than others irrespective of disaster experience. Persons with larger support networks provided more support of all types. Presumably, these people had more relatives, friends, and neighbors in need of assistance. Whites provided more tangible support, but blacks provided more informational support. Women provided more emotional support than men, which is consistent with their customary role of provider of affection and compassion. Married, younger, and more educated respondents also provided social support to a greater extent.

In a few cases, however, disaster changed groups' relative propensities to provide support. Though admittedly not very strong, a *pattern of recruitment* emerged on tangible support among male, married, moderately and highly educated, and younger and middle-aged individuals. Most likely, these victims possessed resources and skills that met the immediate and essential needs of those affected by the event. On one hand, men and tradespeople of either gender trained in medical first aid, insurance adjusting, or household repairs are the people whose expertise can bring instant

relief to disaster victims. On the other hand, younger victims and victims of higher SES may have greater access to and availability of various resources to aid others.

Our initial interest in measuring provided support was prompted by the belief that helping others in their community would have psychological benefits for disaster victims' recovery. Prior research suggested that the benefits of providing support are greatest under conditions of balance, reciprocity, or bidirectionality (Antonucci & Jackson, 1990; Maton, 1987; Rook, 1987). On the other hand, it also must be acknowledged that a greater reliance on some victims during the postdisaster recovery period could create an extra burden in their busy lives making them more vulnerable to higher levels of postevent distress. Too much involvement may simply become a liability (see Kessler et al., 1985; Rook, 1992). For example, Solomon, Smith, Robins, and Fischbach (1987) found that female and male victims who were both personally exposed to disaster and heavily relied upon for support by others were more likely to experience negative consequences in the aftermath. Interestingly, these negative consequences were most pronounced among women who had the largest support networks. In the present study, we also found that women generally provided more emotional help (main effect) but male victims were more sought after for tangible help (interaction). Solomon et al. concluded that "individuals expecting to fulfill a nurturant role (typically women) may experience negative psychological effects when disaster intensifies nurturance demands beyond the supporter's capacity to satisfy" (p. 1109). Likewise, a greater recruitment of younger victims, especially those in the middle adulthood, into the postdisaster helping community may frustrate their own coping efforts. Thompson et al. (1993) reported that the influx of additional obligations and responsibilities in the recovery process accounted well for the finding that middle-aged adults tend to be most distressed following a disaster. Consequently, these authors recommended that the burden of responsibility for recovery be more equitably shared. More research on the relative benefits and costs of providing help in the context of community stress would prove valuable.

## CONCLUSION

Victims of Hurricane Hugo received and provided very high levels of social support. The emergent postdisaster helping community gave priority to those victims who experienced greatest loss and harm and thus generally distributed assistance according to the rule of relative needs. Furthermore, there was a pattern of special concern for those older adults whose lives

and health were threatened by the event. Some victims were recruited to serve more than others because their resources and skills were in a great demand. Quite likely, victims of Hurricane Hugo united into "altruistic" or "therapeutic" communities with their distinguishing characteristics of solidarity, togetherness, and mutual helping. Although such images are inspiring and reassuring, we cannot accept them uncritically. The patterns of exceptions and limitations should not be ignored. Mutual help is not distributed equally or randomly. Many victims are excluded from, or overlooked by, helping communities whereas others have a clear advantage in securing postdisaster relief. The heartening examples of genuine solidarity and altruism that our society can temporarily summon in times of catastrophic events should not obscure the fact that the pattern of neglect is equally real.

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