

Gender and Helping Behavior: A Meta-Analytic Review of the Social Psychological Literature

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According to our social-role theory of gender and helping, the male gender role fosters helping that is heroic and chivalrous, whereas the female gender role fosters helping that is nurturant and caring. In social psychological studies, helping behavior has been examined in the context of short-term encounters with strangers. This focus has tended to exclude from the research literature those helping behaviors prescribed by the female gender role, because they are displayed primarily in long-term, close relationships. In contrast, the helping behaviors prescribed by the male gender role have been generously represented in research findings because they are displayed in relationships with strangers as well as in close relationships. Results from our meta-analytic review of sex differences in helping behavior indicate that in general men helped more than women and women received more help than men. Nevertheless, sex differences in helping were extremely inconsistent across studies and were successfully predicted by various attributes of the studies and the helping behaviors. These predictors were interpreted in terms of several aspects of our social-role theory of gender and helping.

Whether women and men differ in the extent to which they give and receive help is a question of considerable interest from both theoretical and applied perspectives. Although many psychologists have addressed this question (e.g., Deaux, 1976; Maccoby & Jacklin, 1974; J. A. Piliavin & Unger, 1985), until now no systematic review has been carried out on sex differences in the large social psychological literature on helping.

An analysis based on social roles provides a theoretical framework for our synthesis of this literature. Like other social behaviors, helping can be viewed as role behavior and therefore as being regulated by the social norms that apply to individuals based on the roles they occupy. To account for sex differences in helping from this perspective, we must understand the ways in which helping is sustained and inhibited by the social roles occupied mainly or exclusively by one sex versus the other. Gender roles are one important class of social role in this analysis. Other roles, if they are occupied primarily by a single sex (e.g.,

firefighter, homemaker), can also underlie sex differences in helping.

By providing a single, integrative theoretical perspective, our social-role approach is a macrotheory for understanding sex differences in various psychological processes that may underlie helping behavior. A number of such mechanisms have been discussed recently by J. A. Piliavin and Unger (1985). In our approach, hypotheses about sex differences in such processes are derived from an analysis of the social roles commonly occupied by women and men.

Before we present our theory, one warning is appropriate: Given the limitations of the empirical literature, it is impossible to test all of the predictions that follow from this analysis. This inability will highlight omissions in the kinds of role relationships within which helping behavior has been studied.

Gender Roles and Helping

To explain sex differences in helping, we first explore gender roles. These roles consist of the norms applicable to individuals based on their socially identified gender. We argue that the norms governing helping are quite different in the female and male gender roles.

The female gender role. The female gender role includes norms encouraging certain forms of helping. Many feminist social scientists (e.g., Bernard, 1981; Chodorow, 1978; J. B. Miller, 1976) have argued that women are expected to place the needs of others, especially those of family members, before their own. Gilligan (1982) has identified this theme as women's orientation toward caring and responsibility. Furthermore, several investigators have claimed that women's consideration for others underlies their altruism (e.g., J. A. Piliavin & Unger, 1985; Staub, 1978; Underwood & Moore, 1982). In addition, many psychologists have argued that women (and girls) are generally more empathic or sympathetic than men (and boys; e.g., Feshbach, 1982; Hoffman, 1977). Yet, in agreement with our social-role

A preliminary report of this research was presented at the meeting of the Midwestern Psychological Association, May 1984.

This research was supported by National Science Foundation Grant BNS-8216742.

We thank Larry Hedges for guidance concerning statistical analysis, Patricia Renner for help in locating and coding studies and calculating effect sizes, Miriam Lerner for assistance in coding the records of the Carnegie Hero Commission, Robert V. Eagly for help with computer programming, Carole Chrvala, Ellen Drury, and Katherine M. Markee for help in locating studies, and Carolyn Jagacinski for suggestions concerning the statistical analysis. We also thank Catherine Blake, Shelly Chaiken, Kay Deaux, Judith Hall, Samuel Himmelfarb, Janet Hyde, Alice Isen, Carolyn Jagacinski, Mary Kite, Patricia Renner, Valerie Steffen, Wolfgang Stroebe, Helen Weinreich-Haste, Sharon Wolf, and Wendy Wood for their comments on a draft of the article.

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perspective, Eisenberg and Lennon (1983) have shown that this empathy sex difference is obtained primarily when gender role obligations or demand characteristics are salient.

The female gender role may prescribe that women help only certain people in certain ways. Women are expected to care for the personal and emotional needs of others, to deliver routine forms of personal service, and, more generally, to facilitate the progress of others toward their goals. The demand for women to serve others in these ways is especially strong within the family and applies to some extent in other close relationships, such as friendships.

Research on gender stereotypes provides evidence that norms fostering this nurturant and caring helpfulness are associated with the female gender role. In stereotype studies (e.g., Bem, 1974; Ruble, 1983; Spence & Helmreich, 1978), women have typically been rated more favorably than men, not only on helpfulness, but also on kindness, compassion, and the ability to devote oneself completely to others. Furthermore, such attributes are often rated as more desirable in women than men.

Consistent with this stereotype of women's helpfulness, studies of friendship have found that women, to a greater extent than men, reported providing their friends personal favors, emotional support, and informal counseling about personal problems (Aries & Johnson, 1983; Berg, 1984; Johnson & Aries, 1983; Worell, Romano, & Newsome, 1984). In addition, Bem, Martyna, and Watson (1976) showed that even with subjects' level of androgyny controlled, college women were rated as more nurturant than college men in a conversation with an apparently lonely student of the same sex.

The male gender role. The male gender role, particularly in its traditional form, encourages other forms of helping. One such form is heroic behavior, especially altruistic acts of saving others from harm performed at some risk to oneself. Thus, *hero* is defined in the *Oxford English Dictionary* (1971) as "a man distinguished by extraordinary valour and martial achievements; one who does brave or noble deeds." Although our culture also offers a parallel concept of *heroine*, it is not included in our analysis of the female gender role because heroine is a much less widely accepted ideal for women than hero is for men.

Research on gender stereotypes provides only limited support for an association between heroism and masculinity. Attributes such as willingness to take risks, adventurousness, calmness in a crisis, and the ability to stand up well under pressure are ascribed to men more than women and are often viewed as more desirable in men (Bem, 1974; Broverman, Vogel, Broverman, Clarkson, & Rosenkrantz, 1972; Ruble, 1983; Spence, Helmreich, & Stapp, 1974). Such attributes may well predispose men to act heroically, yet heroism is not a quality stereotypically ascribed to men, no doubt because heroic acts are believed to occur only in quite extreme and unusual circumstances.

Some support for an association between heroism and the male role comes from noting that almost all of the people who have been singled out as heroic by scholars and other writers are men (e.g., Hook, 1943; Kerenyi, 1960; Thomas, 1943). Yet the implications of this evidence for the male gender role are not clear-cut because some of these heroes occupied other roles that strongly encourage heroic behavior (e.g., military leader).

Additional information about heroism can be found in the records of the Carnegie Hero Fund Commission, which since

1904 has given awards to people who perform acts (in the United States or Canada) in which they risk or sacrifice their lives "in saving, or attempting to save, the life of a fellow being" (Carnegie Hero Fund Commission, 1907, p. 21). Convenient with respect to determining whether heroism is linked with the male gender role and not merely with other roles occupied disproportionately by men is the exclusion from awards of persons such as firefighters whose duties in their regular vocations require heroism. Because parental roles may require that heroism be displayed when one's children are in danger, it is also convenient that the Carnegie Hero Commission excluded from awards persons who rescue family members, "except in cases of outstanding heroism where the rescuer loses his life or is severely injured" (Carnegie Hero Fund Commission, 1983, p. 4). Women are explicitly included: "Whenever heroism is displayed by man or woman in saving human life, the Fund applies" (Carnegie, 1907, p. 11). Yet classification of the 6,955 Carnegie medalists according to their sex indicates that only 616 (8.86%) were women (W. F. Rutkowski, Secretary, Carnegie Hero Fund Commission, personal communication, February 18, 1986).

The idea that heroic forms of helping are prescribed by the male gender role suggests that men are more helpful than women under certain circumstances. For example, because heroism implies that the helper takes risks, the amount of danger inherent in helping may affect sex differences in helping. Women may perceive many classes of situations as more dangerous than men do—for example, when helping is directed toward a male stranger or when giving aid entails the risk of physical injury to the helper. In the absence of pressures to behave heroically, women may not feel as obligated as men do to risk harm to themselves in order to provide help.

The presence of an audience and the availability of other helpers may also be relevant to heroic helping. Thus, bystanders might elicit greater helping from men than women because heroic status is achieved only if there is public recognition for one's exploits. In the words of Hoffer (1951), "There is no striving for glory without vivid awareness of an audience" (p. 65). The availability of other potential helpers may also increase men's helping because heroism is achieved by being the one person among many who is willing to take the risks involved in helping.

Related to heroism is chivalry, which is also promoted by the male gender role. Behaviors labeled as *chivalrous* are "characterized by pure and noble gallantry, honor, courtesy, and disinterested devotion to the cause of the weak or oppressed" (*Oxford English Dictionary*, 1971). The helpfulness inherent in chivalry is illustrated by several of the chivalric vows taken by medieval knights: (a) "to protect the weak and defenseless," (b) "to respect the honor of women," (c) "to live for honor and glory, despising pecuniary reward," and (d) "to fight for the general welfare of all" (Hearnshaw, 1928, p. 24). The continuing influence of chivalry on conceptions of ideal male behavior in Western society is well documented (e.g., Aresty, 1970; Fraser, 1982; Girouard, 1981). Furthermore, rules consistent with the chivalric code, especially rules prescribing that men protect women, are common in twentieth century etiquette books (e.g., Post, 1924; Vanderbilt, 1963). Yet as Walum (1974) has shown,

many people have become ambivalent about chivalrous behavior since the advent of the Women's Movement.

Although the idea that the male role fosters chivalrous behavior might suggest that attributes such as civility should be ascribed to men, such findings have not been obtained in stereotype research. Yet chivalry, with its quality of noblesse oblige, may be stereotypically associated primarily with men of relatively high social status rather than men in general. More generally, chivalrous behavior is not synonymous with polite or civil behavior because chivalry encourages only certain forms of politeness carried out in relation to certain targets in appropriate social contexts.

To the extent that chivalry continues to influence behavior, men would be more helpful than women in situations that allow chivalrous protectiveness or civility. Examples include a man carrying a heavy package for a woman or helping a woman put on her coat. Such behaviors, like heroic behaviors, would be directed toward strangers as well as intimates, and at least some courtesies, such as assisting a woman with her coat, probably occur more commonly among people who do not know one another well.

Women probably receive more chivalrous help than men do.¹ The chivalric code stipulates that men direct their courteous and protective acts toward women, who constitute one class of "weak and oppressed" people whom chivalrous men are supposed to help. Indeed, women are regarded as weaker and more dependent than men (e.g., Broverman et al., 1972), although this perception of weakness may elicit victimization as well as helping. Also important in insuring that chivalrous helping is directed toward women is women's fulfillment of their chivalric duty to welcome and, moreover, to inspire men's courtesies and protection. Ventimiglia's (1982) finding that women for whom a man held a door displayed more gratitude than men for whom a woman held a door is consistent with this portrayal of women but also allows other interpretations (e.g., men's surprise or puzzlement at unexpected behavior).

In summary, the helping behaviors consistent with the male gender role differ both in kind and in social context from those consistent with the female gender role. The helping expected of men encompasses nonroutine and risky acts of rescuing others as well as behaviors that are courteous and protective of subordinates. These behaviors commonly occur in relationships with strangers as well as in close relationships and may often be directed toward women. The helping expected of women mainly consists of caring for others, primarily in close relationships.

Finally, even though we have emphasized the support gender roles provide for helping, prohibitions against helping may also be included in these roles. In particular, parents and other socializers may teach girls about the potential dangers of dealing with strangers. Rules of avoidance, primarily intended to lessen the possibility that girls and women will be victims of sexual assault (e.g., U.S. Department of Justice, 1979), may lead them to judge many helping behaviors as dangerous. Thus, norms enjoining women to avoid strangers, especially male strangers, may be as important in accounting for help given to strangers as norms encouraging men to lend assistance to strangers.

Other Social Roles and Helping

In natural settings, some helping behaviors may be more common in one sex because they are aspects, not of gender

roles, but of other social roles occupied primarily by persons of that sex. The domestic role is a case in point. The service-oriented character of the "housewife" role has been noted in feminist writings (e.g., Friedan, 1963) and documented in empirical research (e.g., Walker & Woods, 1976). Because this role is occupied almost exclusively by women, care-giving within the family is much more commonly carried out by women than men. Indeed, because of the traditional importance of the domestic role in women's lives, the norms associated with it may be very similar to those associated with the female role in general. As Eagly and Steffen (1984) argued based on their research on gender stereotypes, communal qualities such as kindness and devotion to others are associated with women in general, primarily because these qualities are associated with the domestic role.

The view that the domestic role encourages caring behavior toward family members is consistent with some of the more general views expressed about women's roles in close relationships. For example, Bernard (1981) summarized evidence suggesting that women supply the major emotional support, both to their husbands and to their women friends, and Belle (1982a, 1982b) documented the ways in which women's traditional roles as homemaker, friend, and neighbor often require that they provide more social support than they receive. Based on a review of the social support literature, Vaux (1985) suggested that women provide (and receive) more emotional support than men.

Other helping behaviors are required by occupational roles other than the domestic role—for example, secretaries help bosses, nurses help physicians, and social workers help poor and oppressed people. Women are particularly well represented in paid occupations that focus on some form of personal service: Over half of all employed women are in clerical and service occupations, and women with professional positions are predominantly in teaching and nursing (U.S. Department of Labor, 1980). In contrast, men are especially well represented in paid occupations that may require placing one's life in jeopardy to help others (e.g., firefighter, law enforcement officer, soldier). Finally, women's traditional dedication to community service in volunteer roles is yet another source of sex differences in helping behavior in natural settings.

Skills gained in social roles. As occupants of social roles, people often gain skills required in helping. Furthermore, people also gain skills because they anticipate occupying roles that

¹ Because it might also be argued that heroic helping is directed more toward women than men, we analyzed the sex of the recipients of heroic helping in the 404 accounts of the deeds of the Carnegie medalists from every third year starting in 1970 (Carnegie Hero Fund Commission, 1970, 1973, 1976, 1979, 1982). The findings proved difficult to interpret. Among the 95% of these heroes who were male, 22% rescued one or more adult women, 30% rescued children, 39% rescued men, and the remaining 9% rescued groups of people consisting of men, women, and/or children. Yet many of these incidents occurred in occupational or recreational settings where men were probably in the company of other men. In addition, Meindl and Lerner's (1983) experimental demonstration that the victimization of a female partner elicited heroic behavior from their male subjects is difficult to interpret because the experiment did not yield a comparison of this behavior with that elicited by a male partner.

demand specific skills. For example, men are more likely to occupy (and to anticipate occupying) roles in which they service automobiles and therefore are more likely to have gained the expertise to help people with their cars. In contrast, women are more likely to occupy (and to anticipate occupying) roles in which they nurture young children and therefore are more likely to have gained the expertise to help children. Consequently, possessing appropriate skills allows men to help people with their cars and women to help children, even in the absence of a contemporaneous role requiring these behaviors. Because of such role-linked determinants of skills, helpful acts should be examined for the extent to which people feel competent and comfortable engaging in them. Persons of whichever sex is more competent and comfortable in relation to a particular act would be more likely to engage in that act (see Deaux, 1976; J. A. Piliavin & Unger, 1985).

Social Status and Helping

The distribution of the sexes into higher and lower status roles may also affect helping. In general, subordinate status in hierarchical role relationships increases the likelihood that individuals will be providers of services rather than recipients. Because men tend to have higher status than women in organizations of all kinds, men are more likely to receive aid in attaining job-relevant goals, and women are more likely to provide such aid. Furthermore, to the extent that gender functions very generally as a status cue (Lockheed & Hall, 1976; Meeker & Weitzel-O'Neill, 1977), assistance in attaining longer term goals may be disproportionately directed toward men and delivered by women even outside of organizational contexts. This pattern contrasts with that predicted for minor courtesies, which by chivalric rules should be directed by men toward women.

The typical status difference between the sexes has additional implications when efforts to elicit help are viewed as forms of social influence. From this perspective, a direct request for aid is one type of influence attempt. Helping in response to such an appeal can be regarded as a compliant behavior. In contrast, the mere portrayal of a need, as in bystander intervention studies (e.g., I. M. Piliavin, Rodin, & Piliavin, 1969), is an indirect appeal for aid. Because no specific request is directed toward the potential helper, helping in such a situation can be regarded as an assertive behavior.

The status difference between the sexes has contrasting implications for compliant versus assertive helping behaviors. Because gender is a general status cue, women—like members of other lower status categories—are expected to behave in somewhat compliant and unassertive ways (see Eagly, 1983). Therefore, as Deaux (1976) has also argued, women may be less helpful than men when helping is elicited by the mere portrayal of a need and is therefore an assertive act. In contrast, women may be more helpful than men when helping is elicited by a direct request and is therefore a compliant act.

Limitations of the Research Literature

From a social-role perspective, sex differences in helping behavior should be highly variable because helping is embedded in social roles and is therefore regulated by a variety of social

norms. Consequently, it is not reasonable to predict that either men or women are uniformly the more helpful sex, provided that helping has been studied with methods representative of natural settings. Instead, the size and direction of sex differences should be a product of situational variables that determine what social roles are salient in particular situations.

Our examination of the literature on helping revealed that it is not representative of natural settings: Helping has been studied almost exclusively in brief encounters with strangers in field and laboratory situations and not in long-term role relationships within families, small groups, or organizations. Therefore, the helping fostered by the female role in close or long-term relationships would not be displayed in the available research. Neither would several other forms of women's helping be evident—namely, the help they provide as (a) homemakers, (b) jobholders in service and helping occupations, (c) community volunteers, and (d) occupants of lower status roles in organizations. In contrast, the heroic and chivalrous forms of helping, which are prescribed by the male gender role, would be generously represented because they are displayed in brief encounters with strangers. Even though research has not examined extremely heroic behaviors such as those of the Carnegie medalists, for the moderately dangerous behaviors that have been examined (e.g., changing a tire for a stranger or giving a stranger a ride), men's willingness to take risks and women's obligation to avoid them should engender more help by men than women. Also, helping behavior studied in the research literature should be affected by two other sex-related differences that follow from our role analysis—namely, sex differences in specific skills and in compliance and assertiveness.

In conclusion, when the various components of our social-role analysis are applied to the very restricted set of role relationships within which social psychologists have studied helping, overall sex-difference predictions are that men are more helpful than women and women are more likely than men to receive help. Yet according to our analysis, these sex differences would not be invariant, even in the limited range of situations examined in the helping literature. As already noted, features of social settings (e.g., the presence of other people) and helping acts (e.g., their assertive or compliant nature and the specific skills they require) should affect the direction and magnitude of sex differences. We have tested these predictions using meta-analytic methods of research integration (e.g., Glass, McGaw, & Smith, 1981; Hedges & Olkin, 1985; Rosenthal, 1984).

Method

Sample of Studies

We retrieved the studies included in J. A. Piliavin and Unger's (1985) review, and added to them with a computer-based information search of the following data bases: PsycINFO (*Psychological Abstracts*), 1967–1982; ERIC, 1966–1982; and Social SciSearch, 1972–1982. The key words used in the searches included *altruism*, *prosocial behavior*, *helping behavior*, *assistance*, and *aid*. We also searched through (a) the reference lists of the journal articles in our sample of helping studies, (b) the reference lists of numerous review articles and books on helping behavior, and (c) volumes of journals with the largest number of helping studies, with complete coverage of issues from June 1981 to June 1982.

The criteria for including studies in the sample were (a) the dependent

measure was either a helping behavior or, in a few studies, a commitment to engage in a helping behavior (e.g., volunteering to serve as a subject in an experiment);² (b) the reported results were sufficient either to calculate a sex-of-subject effect size or to determine the statistical significance and/or direction of the sex difference; and (c) the subjects were male and female adults or adolescents (age 14 or older) from the United States or Canada who were not sampled from specialized populations (e.g., mental hospital patients, or particular occupational groups). Studies were omitted if their authors reported the sex distribution of the helpers but failed to report the sex distribution of the non-helpers or the baseline proportions of females and males in the setting (e.g., Bryan & Test, 1967; Snyder, Grether, & Keller, 1974). Studies were omitted if they examined a behavior helpful to individuals but illegitimate according to broader social norms (e.g., a clerk allowing a customer to pay less than the purchase price for an item; Brigham & Richardson, 1979). Studies of reward allocation, cooperation and competition, and equity were also excluded.

The resulting sample (see the Appendix) of 172 studies yielded 182 sex-of-subject reports. Each study contributed one sex-of-subject report, with the exception of 6 studies that contributed two reports and 2 that contributed three. Parts of studies reported as a single study by their authors were treated as separate (e.g., Latané, 1970) if the parts (a) used independent samples of subjects, (b) assessed a different helping behavior in each part, and (c) reported the sex-of-subject difference separately for each part.

Variables Coded From Each Study

The following information was recorded from each report: (a) date of publication, (b) source of publication (journal; other source), (c) percentage of male authors, (d) sex of first author, and (e) sample size (female; male; and total). In addition, the following variables were coded from the information provided in each report: (a) setting (laboratory; campus or school; off-campus), (b) surveillance of helping act by persons other than victim or requester (no surveillance; unclear; surveillance), (c) availability of other potential helpers (not available; unclear; available),³ (d) type of appeal for help (direct request; presentation of need), (e) occupants of victim and requester roles (same person; different persons), and (f) identity of victim/requester (male; female; sex varied; same sex as subject; collective [e.g., charity]; unclear). These variables were coded by a single rater, whose work was then checked by the first author. The second author, who independently coded 25 of the studies according to the criteria developed by the first two raters, agreed with 92%–100% of their judgments, depending on the variable. Disagreements were resolved by discussion.

Variables Constructed From Questionnaire Respondents' Judgments of Helping Behaviors

A questionnaire study was conducted to generate measures of the extent to which each helping behavior was associated with sex differences in (a) the ability to help, (b) the belief that helping is dangerous to oneself, and (c) the perceived likelihood of helping. The likelihood measures were included to allow us to evaluate how well the respondents' implicit theories of their own and others' behavior predicted the helping sex differences obtained in the research literature.

Respondents.⁴ The sample consisted of 146 female and 158 male Purdue University undergraduates who received partial course credit for participating.

Procedure. Respondents participated in groups of 10–50 in sessions conducted by a female experimenter. Each respondent completed one of three versions of a questionnaire that took approximately 1 hr. Each version contained brief descriptions of one-third of the helping behaviors investigated in the studies used in the meta-analysis. These descrip-

tions were similar to those used by Pearce and Amato (1980) and Smithson and Amato (1982) to generate a taxonomy of helping behaviors. For example, Darley and Latané's (1968) study was described as "Coming to the aid of a male student who is having a seizure in a nearby room; you have never met him before but you, he, and the other participants are communicating with one another via microphones as part of a psychology experiment when he suddenly becomes agitated and incoherent." Cunningham, Steinberg, and Grev's (1980) study was described as "Donating money to the World Children's Fund when someone approaches you in a shopping mall with a poster advertising this charity."

Respondents judged these helping behaviors in reaction to three questions assessing beliefs about helping: (a) How competent would you be to provide this help? (b) How comfortable would you feel when you provided this help? (c) How much danger would you probably face if you provided this help? Respondents also judged these behaviors in reaction to three likelihood questions: (a) How likely is it that you would provide this help? (b) How likely is it that the average woman would provide this help? (c) How likely is it that the average man would provide this help? These ratings were made on 15-point scales. The questionnaire was divided into six parts, each of which elicited respondents' judgments in relation to one of these six questions. The order of the first three parts was counterbalanced, as was the order of the last two. Within each part, the descriptions of the behaviors appeared in one of two random orders.

Analysis of ratings. For the first four of the six questions just listed, mean scores for each helping behavior were computed separately for female and male respondents. For each behavior, the female mean was subtracted from the male mean to yield a mean sex difference, which was standardized by dividing it by the pooled (within-sex) standard deviation. For the last two questions on the average woman's and average man's likelihood of helping, the respondents' mean rating of the average woman for each behavior was subtracted from their mean rating of the average man to yield a mean stereotypic sex difference, which was standardized by dividing it by the standard deviation of the differences between the paired ratings.

Computation and Analysis of Effect Sizes

The effect size index used in the present study is *d*, the difference between the means of two groups, divided by the pooled (within-sex) standard deviation. For sex-of-subject effect sizes, this computation was based on (a) *t* or *F* for 13 reports,⁵ (b) *r* or chi-square for 7 reports, (c)

² If a behavioral measure and a behavioral commitment measure were both reported, the effect size was based only on the behavioral measure.

³ Other helpers were regarded as available even if not physically present if it was likely that subjects believed such helpers were potentially available to the victim or requester. For example, other helpers were coded as available to people who requested charity donations, although these other helpers were not necessarily physically present.

⁴ In this article, the term *respondents* designates people who participated in the questionnaire study, and the term *subjects* designates people who participated in the original experiments reviewed in this meta-analysis.

⁵ If such a statistic was presented as a component of a multifactor analysis of variance, the error term was reconstituted by adding into the error sum of squares all (available) between-groups sums of squares except that for the sex-of-subject effect. By this procedure, recommended by Hedges and Becker (1986) and Glass, McGaw, and Smith (1981), one-way designs were approximated. The procedure is especially appropriate in the present meta-analysis because the great majority of sex differences in the available studies were reported for one-way designs.

means and standard deviations or error terms for 2 reports, and (d) the proportions of men and women who helped for 77 reports. For the proportions, the probit transformation recommended by Glass et al. (1981) was used to compute d , with proportions greater than .99 or less than .01 adjusted by the recommended Bayesian procedure. All effect size calculations were performed independently by the first author and another individual, who then resolved any discrepancies.

The statistical significance and/or direction of the 182 sex-of-subject differences was recorded, and an effect size (d) was calculated for the 99 helping behaviors for which sufficient information was provided. Whenever possible, these procedures were also carried out for the sex-of-victim/requester differences as well as for the simple effects of (a) sex of subject for male and female victims/requesters, and (b) sex of victim/requester for male and female subjects. If possible, the significance of the Sex of Subject $\times$ Sex of Victim/Requester interaction was also recorded.

The effect sizes were corrected for the bias from d 's overestimate of the population effect size, especially for small samples (Hedges, 1981). Then the study outcomes were combined by averaging the effect sizes. To determine whether the studies shared a common effect size, the homogeneity of each set of effect sizes was examined (Hedges, 1982a). In addition, the normality of the distributions of effect sizes was assessed. Deviations from normality may be diagnostic of various problems discussed by Light and Pillemer (1984), such as the presence of outliers and the omission of smaller effect sizes due to publication bias. Yet if the effect sizes are not homogeneous, tests of normality should be interpreted with caution because they presume that the data are from a single population. Both categorical and continuous models were tested (Hedges, 1982a, 1982b; Hedges & Olkin, 1985). In addition, counting methods were applied (Rosenthal, 1978, 1984).

Results

Sex-of-Subject Differences

Characteristics of studies. As a first step, it is informative to examine the characteristics of the studies from which conclusions about sex differences in helping shall be drawn. Table 1 shows these study characteristics, summarized separately for (a) the studies for which effect sizes could be calculated and (b) the larger sample of studies, which included studies with calculable effect sizes and studies that reported a nonsignificant sex difference but did not provide information sufficient to compute an effect size. The first eight characteristics are called *continuous variables* because they were measured on continuous scales, and the remaining five are called *categorical variables* because each consists of discrete categories into which the studies were classified.

As shown by the central tendencies of the first three continuous variables in Table 1, the studies usually (a) were published relatively recently, (b) involved moderate numbers of subjects, and (c) had male authors. The means for the next three continuous variables in Table 1 represent the sex differences in questionnaire respondents' beliefs about (a) their competence to engage in each helping behavior, (b) their comfort in providing this help, and (c) the danger they would face if they provided this help. As shown by the confidence intervals associated with these means, only the danger sex difference differed significantly from 0.00 (the value indicating exactly no sex difference) for the studies with known effect sizes: Women estimated they would face more danger from helping than men estimated they themselves would face. For the larger sample of studies, this danger

Table 1
Summary of Study Characteristics

Variables	Sample with known effect sizes	All reports ^a
Continuous variables^b		
<i>Mdn</i> publication year	1975.46	1975.62
<i>Mdn</i> no. of subjects	159.88	119.94
<i>M</i> percentage of male authors	75.97 (69.37/82.57)	75.88 (70.89/80.86)
<i>M</i> sex differences in judgments of helping behaviors		
Competence ^c	0.06 (-0.02/0.14)	0.00 (-0.05/0.06)
Comfort	-0.07 (-0.15/0.00)	-0.13 (-0.18/-0.08)
Danger	0.11 (0.06/0.16)	0.09 (0.06/0.12)
Own behavior	-0.02 (-0.10/0.06)	-0.07 (-0.12/-0.02)
Stereotypic ^d	-0.09 (-0.22/0.05)	-0.21 (-0.30/-0.12)
Categorical variables^e		
Setting ^f	16/36/47	41/58/84
Surveillance ^g	41/42/16	77/79/25
Availability of other helpers ^h	42/57	73/108
Type of appeal ⁱ	59/40	109/72
Identity of victim/requester ^j	24/18/34/6/15/2	48/37/55/8/26/7

Note. $n = 99$ for "Sample with known effect sizes" column. $n = 181$ for "All reports" column.

^a Sample includes studies for which effect sizes were calculable and studies for which they were not. Studies reporting only the direction of the effect size were excluded. ^b Values in parentheses are 95% confidence intervals. ^c Values are positive for differences expected to be associated with greater helping by men (greater male estimates of competence, of comfort, and of own likelihood of helping; greater female estimate of danger to self). ^d Values are positive when questionnaire respondents believed men were more helpful than women. ^e Entries are numbers of reports found within each category. Reports that could not be classified because the attribute was varied in the study were placed in the middle category for setting and surveillance and in the first category for availability of other helpers and type of appeal. ^f Categories are laboratory/campus/off-campus. ^g Categories are no surveillance/unclear/surveillance. ^h Categories are not available or unclear/available. ⁱ Categories are direct request/presentation of need. ^j Categories are male/female/sex-varied/same-sex-as-subject/collective/unclear.

sex difference was also significant, and in addition, women rated themselves as significantly more comfortable in helping than did men.

The last two continuous variables in Table 1 reflect questionnaire respondents' judgments of the likelihood that the helping behaviors would be performed. Sex differences in these judgments proved significant only for the larger sample of studies: Female respondents judged themselves more likely to help than male respondents judged themselves, and respondents of both sexes judged the average woman more likely to help than the average man.

Table 2
Summary of Sex-of-Subject Differences

Criterion	Values
Effect size analyses	
Known effect sizes ($n = 99$)	
M effect size ($M d$)	0.13
95% CI for $M d$	0.03/0.23
Mdn effect size	0.10
M weighted effect size (d_+) ^a	0.34
95% CI for d_+	0.32/0.36
Total no. of subjects	37,308
All reports ($n = 181$)	
M effect size ($M d$)	0.07
95% CI for $M d$	0.02/0.13
Total no. of subjects	48,945
Counting methods	
	Frequencies χ^2
Differences in the male direction ^b	63/101 (.62) 5.70*
Significant differences in the male direction ^c	28/181 (.15) 104.13 ^{d**}

Note. When all reports were included, a value of 0.00 (exactly no difference) was assigned to sex differences that could not be calculated and were reported as nonsignificant. Effect sizes were calculated for all significant differences. Effect sizes are positive for differences in the male direction and negative for differences in the female direction. CI = confidence interval.

^a Effect sizes were weighted by the reciprocal of the variance. ^b Frequencies are the number of differences in the male direction divided by the number of differences of known direction. The proportion appears in parentheses. ^c Frequencies are the number of significant differences ($p < .05$, two-tailed) in the male direction divided by the total number of comparisons of known significance. The proportion appears in parentheses. Although there were 18 significant differences in the female direction, the statistical significance of this unpredicted outcome cannot be evaluated, given the one-tailed logic of these counting tests (see Rosenthal, 1978). ^d Based on expected values of 5 and 176, or .03 and .97 of n .

* $p < .01$, one-tailed. ** $p < .001$, one-tailed.

The summaries of the categorical variables appear next in Table 1. The studies were more often conducted in field settings (off-campus or on) than in laboratory settings. The potential helpers usually were either not under surveillance by anyone other than the victim or requester or it was unclear whether such surveillance occurred. Studies were more evenly distributed in relation to the next two variables—availability of other helpers and type of appeal. For identity of victim or requester, common arrangements were male targets, female targets, targets who varied by sex, or collective targets (e.g., charities).

Summary of sex-of-subject differences. The summary of the sex-of-subject effect sizes in Table 2 allows one to determine whether there is an overall sex difference in helping, based on the available reports. A mean effect size that differs significantly from the 0.00 value that indicates exactly no difference suggests an overall sex difference. The mean of the known effect sizes was relatively small but, as shown by its confidence interval, differed from 0.00 in the direction of greater helping by men than women. Weighting each known effect size by the reciprocal of its variance (Hedges & Olkin, 1985), a procedure that gives

more weight to effect sizes that are more reliably estimated, yielded the largest mean effect size in the male direction. The distribution of the known effect sizes, which was somewhat positively skewed, departed slightly from normality, $W = .96$, with values lower than approximately .98 indicating rejection of the hypothesis of normality at $p < .05$ (Weisberg & Bingham, 1975).

There is no completely satisfactory method to compute a mean effect size that takes into account the nonsignificant effects that could not be calculated because of a lack of sufficient information. Nevertheless, one possible solution is to give these nonsignificant effects the value of 0.00 (indicating exactly no sex difference). When this step was taken, the mean (unweighted) effect size decreased, but remained significant, again in the male direction. This mean is reported in Table 2, under "All reports."

As Table 2 shows, the conclusion that men helped more than women was supported by counting test results (see Rosenthal, 1978) demonstrating that .62, the proportion of reports indicating a sex difference in the male direction (disregarding significance) departed significantly from .50, the proportion expected under the null hypothesis. As Table 2 also shows, greater helping by men than women was also consistent with a second counting test, which demonstrated that .15, the proportion of reports indicating a significant sex difference in the male direction, departed significantly from .025, the proportion expected under the null hypothesis.

Homogeneity of effect sizes. Although the aggregated sex differences in Table 2 are of interest in relation to our predictions, their importance can be questioned in view of the inconsistency of the findings across the studies. Calculation of a homogeneity statistic, Q , which has an approximate chi-square distribution with $k - 1$ degrees of freedom, where k is the number of effect sizes (Hedges, 1981; Hedges & Olkin, 1985), indicated that the hypothesis that the known effect sizes were homogeneous was rejected, $Q = 1,813.45$, $p < .001$. Therefore, study attributes were used to account for variability in the sex differences. Prediction was attempted only for the 99 known effect sizes, because the 0.00 values used to estimate the nonsignificant effects that could not be calculated are too inexact to warrant an attempt to fit statistical models.⁶

Table 3 presents each sex-of-subject effect size that could be calculated, along with the study attributes that predicted these effect sizes and a brief description of each helping behavior. Effect sizes are ordered by their magnitude and direction so that the largest sex differences in the male direction appear at the beginning of the table and the largest differences in the female direction appear at the end of the table.

Tests of categorical models. Table 4 presents tests of the univariate categorical models that yielded significant between-class effects (analogous to main effects in an analysis of variance) (text continued on page 296)

⁶ Alternative calculations representing each study by only one effect size yielded results very similar to those reported in this article. No results are presented for the following variables which did not relate significantly to the magnitude of either the sex-of-subject or the sex-of-victim/requester effect sizes: source of publication, percentage of male authors, sex of first author, and occupants of victim and requester roles.

Table 3
Sex-of-Subject Effect Sizes and Study Variables, Ordered by Magnitude of Effect Sizes

Study	Behavior ^a	Effect size (<i>d</i>) ^b	95% CI for <i>d</i> (lower/upper)	Categorical variables ^c	Sex differences in judgments of helping behaviors			
					Competence ^d	Comfort	Danger	Stereotypic ^e
1. Pomazal & Clore (1973), Study 3	Helping a person with a flat tire or picking up a hitchhiker	1.48 (.34/.03)	1.29/1.66	3/3/2/2	0.96	0.59	0.69	1.37
2. I. M. Piliavin, J. A. Piliavin, & Rodin (1975)	Helping a man who fell in the subway	1.44 (.10/.00)	1.32/1.56	3/3/2/2	0.52	-0.03	0.34	0.00
3. Pomazal & Clore (1973), Study 1	Helping a person with a flat tire	1.44 (.21/.01)	1.22/1.66	3/3/2/2	1.11	0.26	0.72	1.35
4. Pomazal & Clore (1973), Study 2	Giving a ride to a hitchhiker	1.42 (.20/.01)	1.20/1.64	3/3/2/2	0.73	0.91	0.66	1.39
5. Borofsky, Stollak, & Messé (1971)	Stopping a brutal fight between 2 subjects	1.23 (.48/.10)	0.57/1.89	1/3/2/2	0.85	0.49	0.52	0.98
6. J. A. Piliavin & I. M. Piliavin (1972)	Helping a man who fell in the subway	1.03 (.08/.00)	0.88/1.18	3/3/2/2	0.52	-0.03	0.34	0.00
7. Kleinke, MacIntire, & Riddle (1978), Study 1	Mailing a letter for a woman in a shopping mall	0.86 (.85/.57)	0.41/1.31	3/2/2/1	-0.09	-0.28	-0.03	-0.13
8. Solomon & Herman (1977)	Picking up fallen groceries for a woman at her car	0.79 (.53/.24)	0.26/1.31	3/2/1/2	0.03	-0.11	0.13	0.26
9. West, Whitney, & Schneider (1975), Study 1	Helping a person with car trouble on a busy street	0.75 (.04/.01)	0.66/0.84	3/3/2/2	0.34	0.50	0.08	1.28
10. Schopler & Bateson (1965), Study 1	Volunteering for an experiment on exposure to heat	0.72 (.61/.33)	0.31/1.13	2/1/2/1	0.85	0.72	0.55	0.36
11. Wispe & Freshley (1971)	Helping a woman with fallen groceries at a store	0.71 (.59/.32)	0.41/1.02	3/2/1/2	-0.36	-0.54	-0.03	0.19
12. I. M. Piliavin, Rodin, & J. A. Piliavin (1969)	Helping a man who fell in the subway	0.65 (.03/.00)	0.59/0.71	3/3/2/2	0.30	0.49	0.26	0.30
13. Blevins & Murphy (1974)	Helping a woman pick up dropped packages	0.60 (.54/.31)	0.04/1.16	3/2/1/2	-0.09	-0.40	-0.22	0.35
14. Feinman (1978)	Letting a stranger into your home to use the phone	0.59 (.95/.85)	0.27/0.91	3/1/2/1	0.66	0.57	0.84	1.26
15. Gelfand, Hartmann, Waldner, & Page (1973)	Reporting a theft by a shoplifter	0.57 (.38/.19)	0.14/0.99	3/2/1/2	0.50	0.29	0.45	-0.04
16. Shaffer, Rogel, & Hendrick (1975), Study 1	Stopping someone from stealing a student's belongings in the library	0.54 (.50/.29)	-0.03/1.12	2/1/1/1	0.02	0.19	0.00	0.76
17. Shotland & Huston (1979), Study 4	Giving a stranger a ride home from campus	0.53 (.61/.40)	0.27/0.80	2/2/1/1	0.36	0.43	0.62	0.57
18. Benson & Catt (1978)	Giving money to a United Way worker at the door	0.49	0.24/0.75	3/1/2/1	-0.25	-0.29	0.31	-0.85
19. Kleinke et al. (1978), Study 2	Lending a dime to a woman in the park	0.49 (.41/.24)	0.21/0.77	3/2/2/1	-0.15	-0.14	0.13	0.20

Table 3 (continued)

Study	Behavior ^a	Effect size (d) ^b	95% CI for d (lower/upper)	Categorical variables ^c	Sex differences in judgments of helping behaviors			
					Competence ^d	Comfort	Danger	Stereotypic ^e
20. Dutton & Lake (1973)	Giving money to a panhandler on campus	0.46 (.70/.52)	0.01/0.90	2/1/2/1	-0.14	-0.05	0.20	-0.11
21. Latané & Darley (1975)	Picking up items someone dropped in an elevator	0.46 (.35/.20)	0.40/0.51	3/2/1/2	-0.31	-0.75	-0.29	-0.38
22. Beaman, Barnes, Klentz, & McQuirk (1978), Study 2	Helping a man sprawled on the floor of a campus building	0.44 (.41/.26)	0.03/0.84	2/3/2/2	0.03	-0.16	-0.42	0.30
23. Seaman (1979)	Helping a man on crutches who fell at a shopping mall	0.42 (.59/.42)	-0.09/0.93	3/3/2/2	-0.13	-0.31	-0.05	-0.02
24. Rudestam, Richards, & Garrison (1971)	Helping an attractive woman carry heavy boxes on campus	0.40 (.45/.30)	-0.04/0.84	2/2/1/2	0.86	1.26	0.31	1.49
25. Goldman, Florez, & Fuller (1981)	Returning the act of holding doors open	0.39 (.48/.33)	0.08/0.69	3/2/1/2	-0.09	-0.31	0.17	-0.28
26. Latané (1970), Study 1, Part 4	Answering a request for your name, on the street	0.38 (.53/.38)	0.14/0.62	3/2/1/1	-0.07	0.34	0.43	0.17
27. Morgan (1973), Part 2	Answering a request for your name, in public	0.36 (.65/.51)	0.17/0.56	3/2/1/1	0.22	0.14	0.67	0.19
28. Schwarz, Jennings, Petrillo, & Kidd (1980)	Stopping a man from stealing a student's calculator in the library	0.36 (.73/.60)	-0.36/1.08	2/2/1/1	0.07	0.24	0.00	0.17
29. Kleinke (1977)	Lending a dime to a woman who asked, at the airport	0.36 (.64/.50)	0.00/0.71	3/3/2/1	-0.15	-0.20	0.08	-0.17
30. Bégin (1978)	Signing a petition for campus spotlights to add beauty	0.35 (.78/.67)	0.11/0.59	2/2/2/1	-0.22	0.04	0.04	0.06
31. Cunningham (1978), Study 1	Helping a woman with dropped papers at a shopping mall	0.34	-0.10/0.79	3/3/2/2	-0.10	-0.29	-0.04	-0.18
32. West et al. (1975), Study 2	Helping a person with car trouble on the street	0.34 (.04/.02)	0.26/0.42	3/3/2/2	0.39	0.72	0.18	0.84
33. Harris, Benson, & Hall (1975)	Donating money to the March of Dimes after church	0.34 (.32/.21)	0.03/0.64	3/2/2/1	-0.03	-0.32	-0.14	-0.16
34. Jackson & Latané (1981)	Donating money to the Leukemia Society to women at the door	0.33	0.11/0.56	3/2/2/1	-0.10	-0.47	-0.01	-0.12
35. Senneker (1979)	Helping a choking female student at an experiment	0.31 (.74/.63)	0.00/0.62	1/2/1/2	0.07	0.13	-0.11	-0.03
36. Latané (1970), Study 2	Giving 20 cents to a stranger for the subway	0.30 (.52/.40)	0.21/0.40	3/2/2/1	-0.23	-0.44	0.21	-0.03
37. Gaertner (1973), Study 1	Calling a garage for a person with car problems	0.29 (.80/.71)	0.11/0.47	3/1/1/1	0.14	-0.46	0.06	-0.34
38. Moss & Page (1972)	Helping a woman who dropped a bag, downtown	0.26 (.78/.70)	-0.10/0.62	3/2/1/2	-0.06	-0.08	-0.16	-0.29

Table 3 (continued)

Study	Behavior ^a	Effect size (<i>d</i>) ^b	95% CI for <i>d</i> (lower/upper)	Categorical variables ^c	Sex differences in judgments of helping behaviors			
					Competence ^d	Comfort	Danger	Stereotypic ^e
39. Samerotte & Harris (1976)	Helping a man who dropped envelopes in a shopping center	0.24	-0.12/0.60	3/3/2/1	-0.16	-0.46	-0.03	-0.57
40. Gaertner & Bickman (1971)	Calling a garage for a person with car problems	0.24 (.67/.58)	0.12/0.36	3/1/1/1	-0.48	-0.48	0.15	-0.44
41. Pomazal (1977)	Donating money to a solicitor from a charity	0.21 (.47/.38)	0.01/0.42	2/2/2/1	0.30	-0.14	-0.03	-0.15
42. Darley & Latané (1968)	Helping a male student who has a seizure at an experiment	0.19 (.69/.62)	-0.41/0.79	1/2/1/2	0.06	-0.08	-0.09	0.10
43. Shotland & Stebbens (1980)	Helping a woman who is sexually assaulted in a campus building	0.18 (.43/.36)	-0.24/0.60	2/1/1/2	1.07	0.83	0.39	1.03
44. Isen, Clark, & Schwartz (1976), Study 1	Making a phone call for a woman with no change	0.17 (.63/.56)	-0.60/0.94	3/1/1/1	0.12	-0.29	-0.19	-0.30
45. Baker & Retz (1978)	Making a phone call for a person with no change	0.13 (.67/.62)	-0.06/0.33	3/1/1/1	-0.37	-0.57	0.11	-0.39
46. Emmswiler, Deaux, & Willis (1971)	Lending change to a stranger for an important phone call	0.13 (.60/.55)	-0.07/0.33	2/1/2/1	0.24	-0.13	0.10	0.02
47. Barnett, Howard, King, & Dino (1981)	Stapling "activity books" for handicapped children	0.13	-0.28/0.55	2/1/2/1	-0.22	-0.51	-0.21	-0.83
48. Karabenick, Lerner, & Beecher (1975)	Helping a person pick up dropped pamphlets	0.13 (.70/.66)	-0.05/0.30	2/2/1/2	-0.32	-0.19	0.15	-0.35
49. Morgan (1973), Part 1	Telling the time to a requester in a public place	0.11 (.91/.89)	-0.08/0.31	3/2/2/1	0.00	-0.07	0.09	-0.24
50. Lindsfold, Forte, Haake, & Schmidt (1977)	Giving money to a crippled persons' fund, on campus	0.10 (.13/.11)	0.01/0.20	2/2/2/1	0.19	0.05	0.16	-0.01
51. Benson, Karabenick, & Lerner (1976)	Mailing a stamped graduate school application left at the airport	0.10 (.42/.38)	-0.08/0.28	3/1/2/2	-0.15	-0.26	-0.32	-0.40
52. Bickman (1974), Study 2	Volunteering to be in an experiment	0.10 (.61/.58)	-0.16/0.37	2/1/2/1	-0.17	0.01	0.11	-0.14
53. Levin & Isen (1975), Study 2	Mailing a letter found in the railway station	0.09 (.54/.50)	-0.53/0.72	3/1/2/2	0.20	0.02	0.08	0.00
54. Bickman (1974), Study 1	Volunteering to be in an experiment	0.08 (.64/.61)	-0.20/0.36	2/1/2/1	-0.17	0.01	0.11	-0.14
55. Shotland & Straw (1976), Study 1	Aiding a screaming woman being shaken by a man on campus	0.07 (.43/.40)	-0.48/0.62	2/2/1/2	0.95	0.84	0.31	0.92
56. Zuckerman & Reis (1978)	Donating blood during a blood drive	0.07 (.21/.19)	-0.18/0.32	2/3/2/2	-0.05	-0.28	-0.08	-0.13
57. Foss & Dempsey (1979), Study 1	Donating blood after agreeing to put a blood drive ad on your door	0.06 (.27/.25)	-0.41/0.53	2/2/2/1	-0.08	-0.26	0.13	-0.08

Table 3 (continued)

Study	Behavior ^a	Effect size (<i>d</i>) ^b	95% CI for <i>d</i> (lower/upper)	Categorical variables ^c	Sex differences in judgments of helping behaviors			
					Competence ^d	Comfort	Danger	Stereotypic ^e
58. Simon (1971)	Calling a garage for a person with car trouble	0.01 (.71/.71)	-0.15/0.17	3/1/1/1	0.03	-0.12	-0.23	0.06
59. Bloom & Clark (1976)	Donating blood to a hurt hemophiliac	0.00 (.08/.08)	-0.28/0.28	2/2/2/1	-0.27	-0.34	0.11	-0.10
60. Harris & Huang (1973b)	Helping a student hurt in an experiment	0.00 (.20/.20)	-0.62/0.62	1/1/1/2	-0.18	-0.34	-0.26	-0.24
61. Solanch (1979), Measure 2	Helping someone pick up dropped pencils at an experiment	0.00 (.15/.15)	-0.62/0.62	1/1/1/2	-0.07	-0.47	-0.12	-0.29
62. Weyant & Clark (1977), Study 1	Mailing a stamped letter left in a phone booth	0.00 (.19/.19)	-0.49/0.49	3/1/2/2	0.21	-0.27	-0.05	-0.17
63. Levitt & Kornhaber (1977)	Giving money to a handicapped woman requesting change	-0.05 (.33/.35)	-0.40/0.31	3/2/2/1	0.27	0.26	0.28	0.09
64. Thayer (1973)	Helping a deaf person make a phone call	-0.06 (.54/.56)	-0.37/0.25	3/3/2/1	-0.36	-0.32	0.24	-0.32
65. Harris, Liguori, & Stack (1973), Study 1	Volunteering to bake cookies or give money for an ecology project, requester at door	-0.07 (.54/.56)	-0.30/0.16	3/1/2/1	-0.55	-0.20	0.19	-0.44
66. Shaffer et al. (1975), Study 2	Stopping someone from stealing a student's belongings in a library	-0.08 (.38/.41)	-0.57/0.41	2/2/1/1	0.02	0.19	0.00	0.07
67. Thalhofer (1971), Measure 3	Volunteering to be in a later experiment	-0.11	-0.39/0.17	1/2/2/1	-0.17	0.01	0.11	-0.14
68. Boice & Goldman (1981)	Calling a garage for someone with car trouble	-0.16 (.58/.64)	-0.51/0.20	3/1/1/1	-0.48	-0.48	0.15	-0.44
69. Harris et al. (1973), Study 3	Volunteering to bake cookies or give money for an ecology project, phone request	-0.16 (.69/.75)	-0.47/0.15	3/1/2/1	-0.37	-0.48	0.20	-0.37
70. Deaux (1972)	Giving information on the phone to an author for a book	-0.17 (.69/.75)	-0.56/0.22	3/1/2/1	0.10	0.07	-0.07	-0.06
71. Thalhofer (1971), Measure 2	Changing a teacher's rating to help a disturbed boy avoid punishment-oriented school	-0.19	-0.48/0.10	1/1/1/1	-0.36	-0.24	0.20	-0.29
72. Slochower, Wein, White, Firstenberg, & DiGiulio (1980)	Donating money to a woman for the March of Dimes on campus	-0.20 (.09/.13)	-0.34/-0.06	2/2/2/1	0.20	-0.10	0.08	-0.02
73. Cunningham (1979), Study 1	Agreeing to an opinion interview on the street	-0.20	-0.37/-0.03	2/2/2/1	0.27	0.28	0.01	0.05
74. Thalhofer (1971), Measure 1	Volunteering time or giving money to help a disturbed boy avoid punishment-oriented school	-0.20	-0.48/0.08	1/1/1/1	-0.48	-0.40	0.28	-0.54

Table 3 (continued)

Study	Behavior ^a	Effect size (<i>d</i>) ^b	95% CI for <i>d</i> (lower/upper)	Categorical variables ^c	Sex differences in judgments of helping behaviors			
					Competence ^d	Comfort	Danger	Stereotypic ^e
75. Foss & Crenshaw (1978)	Helping a woman who dropped a box in a campus parking lot	-0.20 (.53/.61)	-0.69/0.29	2/2/1/2	-0.41	-0.49	0.20	-0.30
76. Fink et al. (1975)	Donating blood in response to a request on campus	-0.25 (.68/.76)	-0.75/0.26	2/2/2/1	0.18	-0.06	0.38	0.00
77. R. A. Baron & Bell (1976)	Agreeing to participate in a student attitude survey	-0.28	-0.59/0.03	2/1/2/1	-0.25	-0.15	-0.11	-0.08
78. Zinser & Farra (1978)	Agreeing to donate time to tutor male freshmen	-0.29	-0.69/0.11	2/1/2/1	-0.12	-0.27	0.40	-0.49
79. Harrell & Goltz (1980)	Stopping someone from stealing a student's calculator in the library	-0.32 (.50/.63)	-0.76/0.13	2/2/1/1	0.95	0.40	0.22	0.46
80. Bleda, Bleda, Byrne, & White (1976)	Informing an experimenter about a cheating subject	-0.33 (.29/.41)	-0.56/-0.09	1/1/1/2	0.23	0.15	0.19	0.23
81. Solanch (1979), Measure 4	Calling a garage for a person with car trouble	-0.33 (.72/.82)	-1.00/0.34	2/1/1/1	0.03	-0.12	-0.23	0.06
82. Pandey & Griffitt (1974), Measure 2	Collating and stapling papers for no pay or credit	-0.35	-0.92/0.22	1/1/2/1	-0.07	-0.52	0.25	-0.36
83. Levy et al. (1972)	During a test, helping a man find a classroom	-0.35	-0.77/0.07	1/2/1/1	0.25	0.05	0.35	0.21
84. Pandey & Griffitt (1974), Measure 1	Collating and stapling papers for no pay or credit	-0.36	-0.93/0.21	1/1/2/1	-0.07	-0.52	0.25	-0.36
85. Pandey & Griffitt (1977), Measure 1	Collating and stapling papers for no pay or credit	-0.39	-0.83/0.05	1/1/2/1	-0.07	-0.52	0.25	-0.36
86. Shotland & Johnson (1978)	Helping a man who falls on campus	-0.41 (.39/.55)	-0.70/-0.12	2/2/1/2	0.23	-0.24	0.11	-0.05
87. Pandey & Griffitt (1977), Measure 2	Collating and stapling papers for no pay or credit	-0.41	-0.86/0.03	1/1/2/1	-0.07	-0.52	0.25	-0.36
88. Bickman (1974), Study 3	Volunteering to be in a later experiment	-0.42 (.23/.38)	-0.80/-0.03	2/1/2/1	-0.17	0.01	0.11	-0.14
89. Lerner & Frank (1974)	Helping someone with fallen groceries at a store	-0.44 (.33/.50)	-0.85/-0.03	3/2/1/2	-0.06	-0.23	-0.12	-0.28
90. Dertke, Penner, & Ulrich (1974)	Informing a clerk that someone stole a book	-0.47 (.04/.10)	-0.73/-0.22	2/1/1/1	0.20	0.22	0.09	0.16
91. Leftgoff-Sechouler (1979)	Helping a person with dropped books in an experimental waiting room	-0.49	-0.78/-0.19	1/1/1/2	-0.36	-0.42	-0.18	-0.23
92. Bihm, Gaudet, & Sale (1979)	Mailing a stamped letter mistakenly put on your windshield	-0.56 (.51/.72)	-0.84/-0.28	3/1/1/2	-0.41	-0.46	0.00	-0.39
93. Cunningham (1979), Study 2	Leaving a generous tip for a waitress	-0.60	-0.95/-0.25	3/2/2/2	0.53	0.15	0.04	0.35

Table 3 (continued)

Study	Behavior ^a	Effect size (<i>d</i>) ^b	95% CI for <i>d</i> (lower/upper)	Categorical variables ^c	Sex differences in judgments of helping behaviors			
					Competence ^d	Comfort	Danger	Stereotypic ^e
94. Schwartz & Gottlieb (1980b)	Helping a man with a neck brace who fell in a campus building	-0.62 (.52/.75)	-1.04/-0.20	2/2/1/2	-0.04	0.02	-0.21	-0.03
95. Wilson & Kahn (1975)	Volunteering to help a graduate student with an experiment	-0.65	-1.28/-0.01	1/1/2/1	-0.57	-0.60	0.03	-0.41
96. Solanch (1979), Measure 1	Calling a garage for a person with car trouble	-0.65 (.84/1.00)	-1.30/0.00	2/1/1/1	0.03	-0.12	-0.23	0.06
97. Schwartz & Ames (1977), Study 3	Mailing an envelope that contains someone's important papers	-0.67	-1.14/-0.21	3/2/2/2	-0.01	-0.07	-0.22	-0.29
98. Smith, Wheeler, & Diener (1975)	Volunteering to spend time with retarded children	-0.70 (.07/.22)	-0.91/-0.50	2/1/2/1	-0.29	-0.63	-0.28	-0.55
99. Austin (1979), Study 3	Stopping someone from stealing a student's belongings in a classroom building	-0.71 (.47/.74)	-0.92/-0.49	2/2/1/1	0.46	0.09	-0.12	0.04

Note. Studies can be located in this table by referring to the Appendix, where the studies' sequence numbers appear. Studies with similar or identical behavior descriptions may differ on study variables because they differ on features that are not conveyed in the summary descriptions. CI = confidence interval.

^a Summary of description given to subjects who rated behaviors. ^b Effect sizes are positive for differences in the male direction and negative for differences in the female direction; values in parentheses are the proportion of men who helped divided by the proportion of women who helped. ^c The first variable is setting (1 = laboratory, 2 = campus, and 3 = off-campus); the second variable is surveillance (1 = no surveillance, 2 = unclear, and 3 = surveillance); the third variable is the availability of other helpers (1 = not available or unclear, 2 = available); and the fourth variable is type of appeal (1 = direct request, 2 = presentation of need). ^d Values are positive for differences expected to be associated with greater helping by men (greater male estimates of competence, of comfort, and of own likelihood of helping; greater female estimate of danger to self). ^e Values are positive when questionnaire respondents believed that men were more helpful than women.

ance) for sex-of-subject differences. In addition to a test of the significance of between-class effects, this approach provides a test of the homogeneity of the effect sizes within each class. If a categorical model were correctly specified (i.e., the data fit the model in the sense that the model sufficiently accounted for the systematic variation in the effect sizes), it would yield a significant between-class effect and homogeneous effect sizes within each class. The between-class effect is estimated by Q_B , which has an approximate chi-square distribution with $p - 1$ degrees of freedom, where p is the number of classes. The homogeneity of the effect sizes within each class is estimated by Q_W , which has an approximate chi-square distribution with $m - 1$ degrees of freedom, where m is the number of effect sizes in the class. Table 4 also includes (a) the mean effect size for each class, calculated with each effect size weighted by the reciprocal of its variance, and (b) the 95% confidence interval for each mean.

Consistent with the significant between-class setting effect, post-hoc comparisons among the mean effect sizes for the three classes (Hedges & Becker, 1986; Hedges & Olkin, 1985) showed that the sex difference (in the male direction) in off-campus settings was larger than the sex difference in campus settings, $\chi^2(2) = 421.68, p < .001$, which differed from the sex difference in the laboratory, $\chi^2(2) = 7.90, p < .025$. Consistent with the significant between-class surveillance effect, the sex difference (in the male direction) with surveillance was larger than the sex difference when surveillance was unclear, $\chi^2(2) = 454.49, p < .001$, which differed from the sex difference without surveillance, $\chi^2(2) = 66.59, p < .001$. The remaining significant between-class effects showed that the tendency for men to help more than women was (a) greater when other helpers were available (or their availability was unclear) versus unavailable and (b) greater when the appeal was a presentation of a need versus a direct request.

Despite these highly significant between-class effects, none of these categorical models can be regarded as having fit the effect sizes. For each model, the hypothesis of homogeneity of the effect sizes was rejected within each class (see Table 4). In addition, the confidence intervals of the mean effect sizes showed that all of the category means indicating a sex difference in the male direction (a positive number), but none of the means indicating a sex difference in the female direction (a negative number), differed significantly from 0.00 and thus indicated a significant sex difference.

Tests of continuous models. Univariate and multivariate tests of continuous models for the sex-of-subject differences were also conducted (Hedges, 1982b; Hedges & Olkin, 1985). These models are least squares regressions, calculated with each effect size weighted by the reciprocal of its variance. Each such model yields a test of the significance of each predictor as well as a test of model specification, which evaluates whether significant systematic variation remains unexplained by the regression model. The error sum of squares statistic, Q_E , which provides this test of model specification, has an approximate chi-square distribution with $k - p - 1$ degrees of freedom, where k is the number of effect sizes and p is the number of predictors (not including the intercept).

As Table 5 shows, univariate tests indicated that six of the continuous variables were significantly related to the sex-of-subject differences. The first of these variables, publication year,

was related negatively to the magnitude of the effect sizes: Effects were larger (i.e., greater tendency for men to help more than women) in the studies published at earlier dates. Effect sizes also were larger to the extent that the following sex differences were obtained in questionnaire respondents' judgments of the helping behaviors: Male (compared with female) respondents (a) rated themselves more competent to help, (b) rated themselves more comfortable in helping, (c) estimated they faced less danger from helping,⁷ and (d) judged themselves more likely to help. Effect sizes also were larger to the extent that respondents of both sexes judged the average man more likely to help than the average woman. Despite highly significant relations, none of these models was correctly specified ($ps < .001$).

To examine the simultaneous impact of the continuous and categorical variables that were significant univariate predictors of effect sizes, we explored various multivariate models. For purposes of these analyses, the categorical variables were dummy-coded. The continuous variables constructed from questionnaire respondents' likelihood judgments were excluded from these models because they assessed, not study attributes, but respondents' abilities to predict helping behaviors. In addition, the sex difference in the respondents' comfort ratings was excluded because of its high correlation with the sex difference in their competence ratings, $r(97) = .81, p < .001$.

The first multivariate model in Table 5 entered publication year, competence sex difference, danger sex difference, and all of the categorical variables significant on a univariate basis. All of these predictors were significant, with the exception of surveillance and the availability of other helpers. The most substantial predictor in this model was the danger sex difference. As reflected in the multiple R of .80, this model was quite successful in accounting for variability in the magnitude of the effect sizes, although the test of model specification showed that it cannot be regarded as correctly specified, $Q_E = 665.35, p < .001$.

Further exploration showed that the sex differences in questionnaire respondents' ratings of competence, comfort, and danger predicted the effect sizes considerably better at some levels of the categorical variables than at others. Prediction from these ratings was especially effective when the setting was off-campus, the helper was under surveillance, other helpers were available, and the appeal to the helper was the presentation of a need. The effects of the resulting interactions are illustrated by the inclusion of the two largest interactions in the second multivariate model in Table 5.

This second model included the interactions of the competence and the danger sex differences with the availability of other helpers. Consistent with these interactions, when other helpers were available there was a strong tendency for effect sizes to be

⁷ Our heroism analysis might also suggest that men would be more helpful than women for especially dangerous acts. Subjects' ratings of danger did relate positively to the effect sizes but the danger sex difference was a somewhat better predictor. Danger sex differences were larger (in the direction of women perceiving more danger than men) to the extent that women perceived a great deal of danger, $r(179) = .54, p < .001$, and were more weakly related to men's perception of danger, $r(179) = .25, p < .001$.

Table 4
Tests of Categorical Models for Sex-of-Subject Effect Sizes

Variable and class	Between-class effect (Q_b)	n	Weighted effect size (d_{i+})	95% CI for d_{i+} (lower/upper)	Homogeneity within each class (Q_w) ^a
Setting	587.74*				
Laboratory		16	-0.18	-0.28/0.09	40.28*
Campus		36	-0.04	-0.08/0.00	210.32*
Off-campus		47	0.50	0.48/0.53	975.11*
Surveillance	789.37*				
No surveillance		41	-0.02	-0.06/0.03	203.98*
Unclear		42	0.22	0.18/0.25	360.19*
Surveillance		16	0.74	0.70/0.77	459.90*
Availability of other helpers	93.74*				
Not available or unclear		42	0.20	0.17/0.24	369.55*
Available		57	0.42	0.39/0.44	1,350.15*
Type of appeal	498.20*				
Direct request		59	0.07	0.04/0.11	348.99*
Presentation of need		40	0.55	0.52/0.58	966.26*

Note. Effect sizes are positive for differences in the male direction and negative for differences in the female direction. CI = confidence interval.

^a Significance indicates rejection of the hypothesis of homogeneity.

* $p < .001$.

larger (i.e., more helping by men than women), to the extent that male respondents rated themselves more competent to help or as facing less danger from helping. When other helpers were not available, these relations between the effect sizes and the competence and the danger sex differences were considerably weaker. Consistent with the hierarchical analysis of interactions (see Cohen & Cohen, 1983), the main effects in this second model were partialled from the interactions but the interactions were not partialled from the main effects. Therefore, for this second model, regression coefficients for the main effects are not reported because they are not interpretable. The second model proved very successful in accounting for variability in the effect sizes, as shown by its multiple R of .83, although it also cannot be regarded as correctly specified, $Q_E = 568.10$, $p < .001$. Additional interaction terms were not added to this model because of the large number of predictors and the multicollinearity that resulted.

Sex-of-Victim/Requester Differences

A subset of the studies varied the sex of the victim or requester and reported a test of this manipulation's impact on helping. Table 6 presents a summary of these sex-of-victim/requester differences. The means of the effect sizes deviated from 0.00 in the direction of greater helping received by women than men. This mean difference was largest when each known effect size was weighted by the reciprocal of its variance and smallest when the nonsignificant effect sizes that could not be calculated were included as 0.00 values. The distribution of the known effect sizes was normal, $W = .98$, with values lower than .94 indicating rejection of the hypothesis of normality at $p < .05$ (Shapiro & Wilk, 1965).

The conclusion that women were helped more than men was also supported by the results of the two counting tests shown in Table 6. Thus, the proportion of reports indicating a sex-of-victim/requester difference in the male direction, .69, departed

significantly from .50. Also, the proportion of reports indicating a significant sex-of-victim/requester difference in the male direction, .25, departed significantly from .025.

Because the hypothesis that the known effect sizes were homogeneous was rejected, $Q = 761.09$, $p < .001$, the study attributes were used to account for variability in the effect sizes. In interpreting these findings, it should be kept in mind that the sex-of-victim/requester effect sizes related negatively to the sex-of-subject effect sizes, $r(34) = -.40$, $p < .01$. Thus, to the extent that men helped more than women, women received more help than men. Not surprisingly, therefore, the relations already reported between various study attributes and the sex-of-subject differences (Tables 4 and 5) also tended to be significant for the sex-of-victim/requester differences, but opposite in sign (Tables 7 and 8).

Tests of categorical models. Table 7 presents tests of the univariate categorical models that yielded significant between-class effects for sex-of-victim/requester differences. Consistent with these significant effects, the tendency for women to be helped more than men was stronger (a) in off-campus settings versus campus settings (field and laboratory); (b) with surveillance versus unclear surveillance, $\chi^2(2) = 221.18$, $p < .001$, and unclear surveillance versus no surveillance, $\chi^2(2) = 39.28$, $p < .001$; (c) when other helpers were available (or their availability was unclear) versus unavailable; and (d) when the appeal was a presentation of a need versus a direct request.

For each of these categorical models, the hypothesis of homogeneity of the effect sizes was rejected within each class (Table 7). In addition, all of the mean differences were in the female direction (negative numbers) and, as shown by their confidence intervals, differed significantly from 0.00, thus indicating a significant difference.

Tests of continuous models. Table 8 shows tests of continuous models for the sex-of-victim/requester effect sizes. Univariate tests indicated that the same six continuous variables that

Table 5
Tests of Continuous Models for Sex-of-Subject Effect Sizes

Variable	Univariate models		Multivariate model		Multivariate model with interactions	
	<i>b</i>	<i>b</i> *	<i>b</i>	<i>b</i> *	<i>b</i>	<i>b</i> *
Continuous variables						
1. Publication year	-.05***	-.34	-.01*	-.06		
2. Competence sex difference ^a	.58***	.45	.13**	.10		
3. Comfort sex difference	.27***	.28				
4. Danger sex difference	.72***	.39	.54***	.29		
5. Own behavior sex difference	.49***	.42				
6. Stereotypic sex difference ^b	.32***	.49				
Categorical variables						
7. Off-campus setting ^c			.34***	.34		
8. Laboratory setting ^d			-.16**	-.08		
9. Surveillance ^e			.06	.06		
10. No surveillance ^f			-.16***	-.15		
11. Availability of other helpers ^g			-.01	-.01		
12. Type of appeal ^h			.24***	.27		
Interaction terms						
13. Competence Sex Difference × Availability of Other Helpers					.54***	.32
14. Danger Sex Difference × Availability of Other Helpers					.55***	.22
Additive constant			.52		.44	
Multiple <i>R</i>			.80***		.83***	
<i>SE</i> of estimate			.27		.25	

Note. Models are weighted least squares regressions calculated with weights equal to the reciprocal of the variance for each effect size. *b* = unstandardized regression coefficient. *b** = standardized regression coefficient. Effect sizes are positive for differences in the male direction and negative for differences in the female direction. *n* = 99.

^a Values are positive for differences expected to be associated with greater helping by men (greater male estimates of competence, of comfort, and of own likelihood of helping; greater female estimate of danger to self). ^b Values are positive when questionnaire respondents believed that men were more helpful than women. ^c 0 = campus or laboratory, 1 = off-campus. ^d 0 = campus or off-campus, 1 = laboratory. ^e 0 = no surveillance or unclear, 1 = surveillance. ^f 0 = surveillance or unclear, 1 = no surveillance. ^g 0 = not available or unclear, 1 = available. ^h 0 = direct request, 1 = presentation of need.

* *p* < .05. ** *p* < .01. *** *p* < .001.

were significantly related to the sex-of-subject differences were also significantly related to the sex-of-victim/requester differences. Thus, the tendency for women to be helped more than men was larger in the studies published at earlier dates. Also, the tendency for women to be helped more than men was larger to the extent that the following sex differences were obtained in questionnaire respondents' judgments of the helping acts: Male (compared with female) respondents (a) rated themselves more competent to help, (b) rated themselves more comfortable in helping, (c) estimated they faced less danger from helping, and (d) judged themselves more likely to help. The tendency for women to be helped more than men was also larger to the extent that respondents of both sexes judged the average man (vs. woman) more likely to help. Despite highly significant relations, none of these models was correctly specified (*ps* < .001).

Because only 36 sex-of-victim/requester effect sizes were available, caution is appropriate in interpreting multivariate models. Nevertheless, one such model is included in Table 8. All of the predictors in this model were significant, with the exception of the competence sex difference. The reversal in sign of the regression coefficient for the danger sex difference from that in the univariate model may reflect both some multicollinearity and the unreliability of multiple-regression analyses on relatively small numbers of cases. In this model, surveillance

emerged as the most substantial predictor: The tendency for women to be helped more than men was larger if the helper was under surveillance by persons other than the victim or requester. This model proved quite successful in accounting for variability, as shown by its multiple *R* of .78, although it was not correctly specified, *Q_E* = 301.66, *p* < .001.

Sex-of-Victim/Requester Differences for Male and Female Subjects, and Sex-of-Subject Differences for Male and Female Victims/Requesters

Twenty-five of the studies that varied the sex of the victim or requester reported enough information to calculate sex-of-victim/requester effect sizes separately for male and female subjects and sex-of-subject effect sizes separately for male and female victims or requesters. Table 6 includes a summary of these findings.

The means for the male subjects' and the female subjects' sex-of-victim/requester effect sizes showed that the men were significantly more likely to help women than other men, whereas the women were about as likely to help women or men (although the women's weighted mean differed significantly from 0.00 in the female direction). The means for the sex-of-subject effect sizes elicited by the male and female victims or requesters

Table 6

Summary of Sex-of-Victim/Requester Differences, Sex-of-Victim/Requester Differences for Male and Female Subjects, and Sex-of-Subject Differences for Male and Female Victims/Requesters

Criterion	Values									
	Sex of victim/ requester	Sex of victim/ requester for male subjects	Sex of victim/ requester for female subjects	Sex of subject for male victims/ requesters	Sex of subject for female victims/ requesters					
Effect size analyses										
Known effect sizes ^a										
<i>M</i> effect size (<i>M d</i>)	−0.23	−0.28	−0.06	−0.08	0.27					
95% CI for <i>M d</i>	−0.38/−0.08	−0.50/−0.06	−0.14/0.26	−0.35/0.20	0.02/0.51					
<i>Mdn</i> effect size	−0.23	−0.21	0.00	−0.08	0.33					
<i>M</i> weighted effect size (<i>d</i> ₊) ^b	−0.46	−0.41	−0.14	0.10	0.38					
95% CI for <i>d</i> ₊	−0.49/−0.44	−0.46/−0.36	−0.19/−0.09	−0.05/0.14	0.33/0.42					
No. of effects	36	25	25	25	25					
Total no. of subjects	22,357	7,354	6,920	7,137	7,137					
Counting methods ^c										
	Freq.	Exact <i>p</i>	Freq.	Exact <i>p</i>	Freq.	Exact <i>p</i>	Freq.	Exact <i>p</i>	Freq.	Exact <i>p</i>
Differences in the hypothesized direction ^d	24/35 (.69)	.020	20/25 (.80)	.002	11/23 (.48)	— ^e	11/24 (.46)	— ^e	19/25 (.76)	.007
Significant differences in the hypothesized direction ^f	14/55 (.25)	<.001	8/25 (.32)	<.001	3/25 (.12)	— ^g	4/25 (.16)	— ^g	11/25 (.44)	<.001

Note. Effect sizes are positive for differences in the male direction and negative for differences in the female direction. CI = confidence interval.

^a Nonsignificant sex-of-victim/requester sex differences for which *d* could not be calculated were reported in 19 studies. Including these reports as 0.00 (exactly no difference) yielded an unweighted mean effect size of $-.15$ (95% CI = $-.25$ to $-.05$). No nonsignificant differences that could not be calculated were reported for any of the other types of differences reported here. ^b Effect sizes were weighted by the reciprocal of the variance. ^c For sex-of-victim/requester differences, the hypothesized direction is female; for sex-of-subject differences, the hypothesized direction is male. ^d Frequencies are the number of differences in the hypothesized direction divided by the total number of differences of known direction. The proportions appear in parentheses. Exact *ps* (one-tailed) were based on the binomial distribution with $p = .5$ (Harvard University Computation Laboratory, 1955). ^e There were slightly more differences in the nonhypothesized direction. ^f Frequencies are the number of significant differences ($p < .05$, two-tailed) in the hypothesized direction divided by the total number of comparisons of known significance. The proportions appear in parentheses. Exact *ps* (one-tailed) were based on the binomial distribution with $p = .025$ (Robertson, 1960). There were two significant differences in the nonhypothesized direction for sex of victim/requester, zero for sex of victim/requester for male subjects, four for sex of victim/requester for female subjects, four for sex of subject for male victims/requesters, and two for sex of subject for female victims/requesters. ^g There were slightly more significant differences in the nonhypothesized direction.

showed that the men were equally likely to receive help from women and men, whereas the women were more likely to receive help from men. The distributions of these four types of effect sizes were normal (Shapiro & Wilk, 1965), with the exception of the sex-of-subject effect sizes for male victims or requesters, which included one very large value, $d = 2.05$.

The distributions of these four types of sex-difference findings were further explored with the counting tests shown in the bottom section of Table 6. These counting tests substantiated the conclusion that in general, the overall tendency for women to receive more help than men occurred for male but not female helpers, and the overall tendency for men to help more than women occurred for female but not male victims and requesters. Thus, men helping women was an especially prevalent form of helping. Consistent with this interpretation, the Sex-of-Subject $\times$ Sex-of-Victim/Requester interaction was significant in 14 of the 35 instances in which this information was given or could be calculated. This proportion, .40, departed significantly from .05, the proportion expected under the null hypothesis, $p < .001$ (Robertson, 1960).

Although the hypothesis of homogeneity was rejected for each of these four sets of effect sizes ($ps < .001$), model tests are

not presented because of the relatively small number of available effect sizes. In general, these analyses tended to parallel the overall analyses presented earlier for sex-of-subject and sex-of-victim/requester differences, albeit with generally lower levels of statistical significance.

Between-studies comparison of sex-of-subject effect sizes for male versus female victims/requesters. Sex-of-subject effect sizes were also examined for the studies that used only a male or only a female victim or requester. The weighted mean of the 24 sex-of-subject effect sizes from studies that used only a male victim or requester was 0.55 (with the 95% confidence interval extending from 0.51 to 0.59). The weighted mean of the 18 effect sizes from studies that used only a female victim or requester was 0.26 (with the 95% confidence interval extending from 0.16 to 0.35). A categorical model test established that the tendency for men to help more than women was greater for male victims and requesters, $Q_B = 30.39$, $p < .001$. Yet any conclusion that men are especially likely to help more than women if the target of their help is a man is inconsistent with the within-study test we presented in the preceding subsection. The sex-of-subject effect sizes from studies that manipulated the sex of the victim or requester (see Table 6) and therefore provided a con-

Table 7
Tests of Categorical Models for Sex-of-Victim/Requester Effect Sizes

Variable and class	Between-class effect (Q_b)	<i>n</i>	Weighted effect size (d_{++})	95% CI for d_{++} (lower/upper)	Homogeneity within class (Q_w) ^a
Setting	200.03*				
Laboratory and campus		16	-0.11	-0.16/-0.05	84.47*
Off-campus		20	-0.57	-0.60/-0.54	476.60*
Surveillance	333.94*				
No surveillance		13	-0.14	-0.20/-0.07	109.78*
Unclear		16	-0.37	-0.41/-0.34	199.81*
Surveillance		7	-0.84	-0.89/-0.79	117.56*
Availability of other helpers	12.44*				
Not available or unclear		16	-0.41	-0.45/-0.37	119.45*
Available		20	-0.50	-0.54/-0.47	629.21*
Type of appeal	131.52*				
Direct request		23	-0.28	-0.32/-0.24	236.05*
Presentation of need		13	-0.60	-0.63/-0.56	393.52*

Note. Effect sizes are positive for differences in the male direction and negative for differences in the female direction. CI = confidence interval.

^a Significance indicates rejection of the hypothesis of homogeneity.

* $p < .001$.

trolled test of the impact of the victim or requester's sex indicated that the tendency for men to help more than women was larger for female compared with male victims and requesters. The discrepancy between the within- and between-study tests is accounted for by the confounding of target sex with other study attributes. In particular, those studies with only male (vs. only female) targets or requesters tended to examine helping behaviors for which male respondents rated themselves more competent and comfortable than did female respondents.

Discussion

Magnitude of Mean Sex Differences

Because social psychological studies of helping have been confined to short-term encounters with strangers, our social-role theory predicted that men should help more than women and women should receive more help than men. These predictions followed from our contention that the male gender role fosters chivalrous acts and nonroutine acts of rescuing, both of which are often directed toward strangers, whereas the female gender role fosters acts of caring for others and tending to their needs, primarily in close relationships.

Consistent with our predictions, the mean weighted sex-of-subject effect size based on the known effect sizes was 0.34, or approximately one-third of a standard deviation in the direction of greater helping by men than women. Because the additional sex differences reported as nonsignificant that could not be estimated were no doubt smaller on the average than the known differences, 0.34 should be regarded as an upper bound of the aggregated sex-of-subject differences in the sample of studies. Similarly, the weighted mean sex-of-victim/requester effect size of -0.46, or almost half of a standard deviation in the direction of greater helping received by women than men, should be regarded as an upper bound of this aggregated sex difference. These mean effect sizes correspond to point-biserial correlations of .17 between subject sex and helping and -.23 between victim/requester sex and helping. According to Hall's

(1984) review of all available sex-of-subject meta-analyses, our value of .17 is comparable to those reported for sex differences with respect to many other abilities, personality traits, and social behaviors.

Interpretation of these aggregated effect sizes should take into account possible threats to the validity of the sex differences they suggest (see Eagly, 1986). For example, one possible external validity (or generalizability) problem is that a tendency to publish studies with statistically significant findings might have biased the findings toward larger effect sizes (Greenwald, 1975; Lane & Dunlap, 1978). Yet, because sex-difference findings in research on helping behavior were typically peripheral to hypotheses about the effects of other variables, study outcomes on these other variables would have affected publication much more strongly than sex-difference findings. Also reassuring with respect to publication bias is the tendency for the distributions of effect sizes in this meta-analysis to approximate normality (see Light & Pillemer, 1984).

Our findings also suggest that the construct validity and external validity of our overall sex-difference findings were not compromised by disproportionate selection of helping behaviors congenial to men's skills (see Table 1). Instead, the overriding validity issues stem from the exclusive focus of the social psychological helping literature on interactions with strangers in short-term encounters. The elevation of women's danger ratings relative to those of men (see Table 1) no doubt reflects the use of these contexts. Because of the omission of helping in close and long-term relationships, no general conclusion can be drawn about the relative helpfulness of women and men.

Because the findings that were aggregated were extremely inconsistent, mean effect sizes implying an overall sex difference of a certain magnitude are less important than successful prediction of variability in the magnitude of the effect sizes. Helping is a behavior for which a relatively small aggregated sex difference can be created by averaging very heterogeneous effect sizes, many of which are in fact quite large. In such cases, the popular claim that sex differences are small (e.g., Deaux, 1984;

Table 8
*Tests of Continuous Models for Sex-of-Victim/Requester
 Effect Sizes*

Variable	Univariate models		Multivariate model	
	<i>b</i>	<i>b</i> *	<i>b</i>	<i>b</i> *
Continuous variables				
1. Publication year	.02**	.14	.02*	.10
2. Competence sex difference ^a	-.34**	-.32	-.11	-.11
3. Comfort sex difference	-.22**	-.31		
4. Danger sex difference	-.22**	-.16	.31**	.23
5. Own behavior sex difference	-.42**	-.49		
6. Stereotypic sex difference ^b	-.34**	-.69		
Categorical variables				
7. Setting ^c			-.25**	-.28
8. Surveillance ^d			-.62**	-.74
9. No surveillance ^e			.32**	.32
10. Availability of other helpers ^f			.20**	.26
11. Type of appeal ^g			.19**	.25
Additive constant			-1.69	
Multiple <i>R</i>			.78**	
<i>SE</i> of estimate			.24	

Note. Models are weighted least squares regressions calculated with weights equal to the reciprocal of the variance for each effect size. *b* = unstandardized regression coefficient. *b** = standardized regression coefficient. Effect sizes are positive for differences in the male direction and negative for differences in the female direction. *n* = 36.

^a Values are positive for differences expected to be associated with greater helping by men (greater male estimates of competence, of comfort, and of own likelihood of helping; greater female estimate of danger to self). ^b Values are positive when questionnaire respondents believed that men were more helpful than women. ^c 0 = campus or laboratory, 1 = off-campus. ^d 0 = no surveillance or unclear, 1 = surveillance. ^e 0 = surveillance or unclear, 1 = no surveillance. ^f 0 = not available or unclear, 1 = available. ^g 0 = direct request, 1 = presentation of need.

* *p* < .05. ** *p* < .001.

Eagly & Carli, 1981; Hyde, 1981) is misleading. In fact, sex differences in helping behaviors such as picking up hitchhikers and helping strangers in subways are often substantial (see Table 3).

Social Roles and the Prediction of Sex Differences in Helping

The male gender role. Our social-role theory of sex differences yielded a number of predictions that were tested by categorical and continuous models. Our claim that the social psychological literature has focused on the kinds of chivalrous and heroic acts supported by the male gender role suggested that men should be more helpful than women to the extent that (a) women perceived helping as more dangerous than men did, (b) an audience witnessed the helping act, and (c) other potential helpers were available.⁸ On a univariate basis, all three of these predictions were confirmed, although the availability of other helpers did not remain a significant predictor as a main effect in the multivariate models.

Our chivalry analysis also suggested that men should direct their helping acts more toward women than men. The sex-of-victim/requester effect sizes showed that in general, women re-

ceived more help than men. More relevant to our chivalry prediction was the examination of these effect sizes separately for male and female subjects. These findings revealed that although there was a slight tendency for women to help women more than men, the tendency for men to help women more than men was considerably stronger.

Also relevant to the chivalry analysis are the predictors of the sex-of-victim/requester differences. In general, the tendency for women to receive more help than men was stronger under all of the conditions that favored greater helping by men than women. Yet in the multivariate analysis, surveillance by onlookers emerged as by far the strongest predictor of the sex-of-victim/requester effects. Because an audience of onlookers would generally be regarded as potential reinforcers of acts supporting prevailing social norms, it is not surprising in terms of our chivalry analysis that women elicited an especially large amount of help under such conditions. Indeed, to the extent that the tendencies for men to be more helpful than women and for women to receive more help than men are enhanced by the presence of an audience, chivalrous and heroic behavior may be largely a product of social norms rather than ingrained motives or dispositions. These findings recall Eagly and Carli's (1981) report that the tendency for women to conform more than men is especially large when subjects are under surveillance by other group members. Because the effect of surveillance on conformity sex differences is at least partly due to men's tendency to become especially independent when facing an audience (Eagly & Chvrvala, 1986; Eagly, Wood, & Fishbaugh, 1981), future research should evaluate the extent to which men's behavior may be more dependent on external rewards than women's behavior is.

Sex differences in skills. Our social-role theory also suggested that sex differences in helping behavior should be influenced by sex differences in skills. Consistent with this hypothesis, men helped more than women to the extent that male respondents believed themselves more competent and more comfortable in helping than female respondents believed themselves to be. It is also noteworthy that these skill-related factors as well as the sex difference in danger emerged as considerably more important predictors under some conditions than others. Most strikingly, these sex-typed determinants of helping were more important if other helpers were available. In contrast, if an individual was the only potential helper, he or she tended to overcome limitations of sex-typed skills and vulnerability to danger. Similarly, sex-typed skills and vulnerability to danger tended to be important to the extent that the setting was off-campus, the helper was under surveillance, and the appeal was the presentation of a need. These findings suggest that in many natural settings, especially those with onlookers and multiple potential helpers and without direct appeals for help, people behave in ways that are markedly sex-typed, with men helping considerably more than women when sex-typed masculine skills are called for and when potential dangers are more threat-

⁸ We did not distinguish empirically between heroic and chivalrous acts because this discrimination overlapped considerably with our other predictors. Heroic behaviors seemed to differ from those that were merely chivalrous primarily in the higher ratings of danger assigned by the questionnaire subjects, especially by the female subjects.

ening to women. Thus, these interaction findings also support the generalization that sex differences are quite large in some social contexts.

Sex differences in compliance and assertiveness. In terms of another aspect of our analysis, men's higher status in society leads them to behave in ways that are somewhat more dominant and assertive than women. As a consequence, when helping is assertive, men should help more than women. We had also suggested that when helping is compliant, women should help more than men. Yet, because in most studies other conditions favored helping by men (e.g., stranger relationships, field settings), the general tendency for men to help more than women merely decreased for compliant helping. Thus, our findings showed that men were considerably more helpful than women when helping was elicited by the presentation of a need (and was therefore assertive) and only slightly more helpful than women when helping was elicited by a direct request (and was therefore compliant).

Date of publication. Sex differences in helping favored men less strongly in later publication years. Even though other meta-analyses of sex differences have also reported such changes over time (e.g., Eagly & Carli, 1981; Rosenthal & Rubin, 1982), interpretation is ambiguous for helping behavior. Although the movement of our society toward greater gender equality in recent years provides a possible explanation of the time trend, the total span of years of the studies in our meta-analysis is too short to allow for substantial cultural change. Furthermore, the publication year was itself correlated with various study attributes and, as a result, was not a major predictor in the multivariate models.

Success of predictions. The success of our prediction of sex differences in helping behavior is striking. We were able to account for approximately 70% of the variability in the available findings. In evaluating this figure, one should keep in mind that the tendency to help was typically assessed by single-act criteria of low reliability and that the research paradigms were extremely varied, probably differing on many dimensions not represented by our predictor variables. These factors no doubt placed a ceiling on prediction. Indeed, under these circumstances, it is unreasonable to expect to account for all of the systematic variation between effect sizes. Although the absence of correctly specified models suggests caution in interpreting the relations that were obtained (Hedges & Olkin, 1985), the overall consistency of these findings with our theoretical perspective is reassuring with respect to the validity of these relations. Moreover, our meta-analysis achieved better prediction than most other meta-analyses on psychological topics, although a few others have also been very successful (e.g., N. Miller & Carlson, 1984; Tanford & Penrod, 1984; White, 1982). Such instances of successful prediction attest to the orderliness of psychological findings.

The prediction achieved by our multivariate models can be compared with that achieved by our questionnaire respondents. For each helping behavior, these respondents estimated their own response as well as those of the average woman and man. The mean sex differences in these judgments, aggregated across all of the helping behaviors (see Table 1), were in the female direction and thus were inconsistent in direction with the overall sex difference in helping behavior (see Table 2). Perhaps the

general stereotype that women are helpful biased these judgments somewhat in favor of women. Nevertheless, across studies the magnitude of sex differences in these judgments predicted moderately well the effect sizes that estimated sex differences in helping (see Table 5). Although it should be recalled that these judgments were aggregated over the respondents, the fact that these judgments predicted study-level sex differences as well as they did suggests that people have relatively good implicit theories of the conditions under which men and women help. No doubt these implicit theories would have fared even better if the respondents had access to a full range of cues instead of short descriptions of the helping acts. Still, consistent with the literature on statistical and intuitive prediction (e.g., Meehl, 1954), these implicit theories fared less well than our multivariate models, which excluded respondents' estimates of their own and others' behavior.

Conclusion

Our conclusions, like those of other reviews, are limited to the range of behaviors examined in the available studies. The social psychological literature on helping behavior has been limited to supererogatory giving of aid or succor to strangers in brief encounters that often hold potential dangers for helpers. Considering the broad range of helping behaviors in everyday life, this narrow focus is unfortunate. As explained in the introduction, many of the types of helping excluded from the empirical literature are carried out primarily by women, within the family and other close relationships.

It is tempting to ascribe the focus on male-dominated helping behaviors to some sort of preference or bias to portray men favorably, especially because most researchers who have worked in this area are men (see Table 1). Yet a prediction consistent with such a bias—namely, that male authors should obtain larger sex differences favoring men than female authors—was not confirmed. The absence of sex-of-author effects in our study and in Hall's (1984) meta-analyses of nonverbal sex differences raises questions about the generality of Eagly and Carli's (1981) findings that investigators tend to report those sex differences that are flattering to their own gender.

To understand why social psychologists have constructed helping primarily as acts of rescuing and civility that take place between strangers, the research methods of social psychology should be scrutinized. Thus, in the 1970s, when helping research was most popular, the *experimental paradigm* was dominant in social psychology (see Rosnow, 1981). Consequently most helping studies were true experiments even though the majority were conducted in the field rather than in the laboratory. Manipulation of independent variables and random assignment of subjects to conditions, which are the defining features of experimentation, can ordinarily be accomplished only in the context of short-term encounters with strangers. Within long-term relationships, experimental manipulations are difficult, impractical, and very often unethical. Therefore, researchers would have to turn to methods that are somewhat suspect in the experimental tradition—methods involving, for example, subjective reports of one's own and others' behavior. This exclusion of such alternative methods in favor of true experiments with behavioral dependent variables reflects a mode

of scientific activity that might be labeled *agentic* (Bakan, 1966), because of its controlling and objectifying qualities. Several scholars (e.g., Carlson, 1972; Keller, 1985; Wallston, 1981) have identified this tendency and have described it in terms of scientists placing natural phenomena at a distance and treating them as objects to be manipulated and controlled.

Despite the focus on helping behaviors that tend to be favored by men, social psychologists have paid little attention to the reasons why men engage in these behaviors more often than women. Yet William James (1902/1929) believed that men's behavior was often motivated by a desire to be heroic. He claimed that "mankind's common instinct for reality . . . has always held the world to be essentially a theatre for heroism" (p. 356) and argued that a "moral equivalent of war" is needed to satisfy men's urges for heroism (James, 1910/1971). Ernest Becker (1973) developed aspects of James's analysis and proposed that admiration of the heroic stems from our universal fear of death. Whatever the merits of these particular theoretical analyses, psychologists could usefully examine heroism and chivalry as bases of men's helping behaviors and direct empirical research toward these themes. To date, very little empirical research has been conducted on heroism and chivalry (but see Meindl & Lerner, 1983; Ventimiglia, 1982; Walum, 1974).

Finally, social-role theory has considerable potential to explain sex differences in social behaviors. As we have demonstrated, this approach suggested that several social psychological factors are relevant to helping strangers, including, for example, norms prescribing chivalrous behavior, acquired skills, and behavioral tendencies such as assertiveness. Although numerous other approaches have been proposed for explaining altruistic behavior, including biological theories (e.g., Hoffman, 1981; Trivers, 1971), we doubt that they can account for the extraordinary variability of sex differences in helping as effectively as the social psychological predictors that follow from regarding helping as role behavior.

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Appendix

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⁹ Sequence numbers of studies appearing in Table 3 are given in parentheses after each reference. If no number is given, it was not possible to calculate a sex-of-subject effect size from the findings in the article.

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Received July 2, 1985

Revision received February 13, 1986 ■