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**Small Groups, Social Influence,
and
Issues of Peace and Security**

**Betty M. Bayer
Carleton University
Ottawa, Canada**

**Dissertation submitted to the Faculty of Graduate Studies
and Research in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Psychology
September, 1989**

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Abstract

Women's and men's perspectives on social values have been the focus of considerable attention historically. This dissertation took as its central concern their respective views on one social value, peace, and situated it within the context of social influence processes between women and men in small groups. Two interrelated studies were undertaken with a dual interest in social influence, namely, group dynamics and group perspectives; in both studies, women and men participated in same-sex or mixed-sex four-member groups, for a total of five different group compositions (all women, majority women, balanced ratio, majority men, all men).

Prior to group tasks, assessments were made of women's and men's attitudes, beliefs, and concerns on nuclear-related issues, and, in the second study, on their resolutions to the moral dilemma of the nuclear arms race as a means to peace. It was hypothesized that women would be less supportive of nuclear weapons and power, show more concern, support disarmament more than armament, and use, in their reasoning, a perspective derived more from a care than a justice orientation; the reverse trends were predicted for men. Overall, these predictions gained empirical support. Women and men, on an individual level, were found to differ on a number of dimensions that, when combined, spoke to women's more pacific orientation and greater nuclear-related concerns than men's. In general, women conveyed a more intense level of nuclear concern and fear for the future whereas men expressed a stronger degree of nuclear denial and nuclear support. More women than men were also found to support disarmament as the best possible means toward peace, with their reasons in support characterized by a predominant care perspective while men's reflected primarily a justice perspective. With respect to a position of armament, however, the care perspective gave way to one of justice in both women's and men's reasons.

Group level predictions were somewhat more involved, and group level findings somewhat less straightforward in interpretation. In the first study, it was predicted that group ratings of overall nuclear concern would increase with an increase in the number of women in the groups; this hypothesis, however, was not supported by the data. Men appeared to exert more social influence than women across mixed-sex group compositions, as based on group members' nominations of talkativeness and best ideas in combination with group interaction observations of communications received; women were perceived as more concerned with group harmony.

With respect to group resolutions of the nuclear arms dilemma, the general hypothesis was that the group position would shift to disarmament and the reasons to a care perspective as the number of women relative to men increased. Psychological sets, providing group members with an orientation to the group, were introduced with the expectation that an *informational* set would increase social influence attempts by all members as compared to a *relational* set, for which social influence was expected to be stronger for men than women, thereby enhancing the general predicted trend. Group set inductions were, in this way, related to predictions about group interactions, as well as to group positions and group reasoning on the nuclear arms dilemma. While interpretations were constrained by a small data set, partial support was shown in the stronger representation of both an armament position and the relative increase of a justice perspective over a care perspective in reasons for disarmament under the relational set. For mixed-sex groups, predictors of sex group membership, based on members' nominations, suggested that the sets affected members' perceptions of each other in accord with the instructional demands. Regardless of psychological set or mixed-sex group compositions, however, men seemed to be more influential than women, as measured by best ideas, greater task-directed communications, and higher ratings of

influence; women's interactions were characterized by a stronger emphasis on socio-emotional communications. For same-sex groups, socio-emotional interactions were increased under the relational set, but a comparison of their interaction styles indicated that all women groups were marked by more socio-emotional interactions and all men groups by task-directed interactions. Overall, women's and men's interactions seemed to follow traditional lines of specialization in socio-emotional and task-directed communications, respectively. It was thought that these findings may be related to the nature of the task.

Although few social psychological studies of small groups and social influence have turned their attention to the perspectives advanced by groups, emphasizing instead group dynamics, it was concluded that this approach brings with it its own merits to small group research. In particular, the social facets of social psychological study of small groups are expanded beyond the level of individual performance to that of the group itself.

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Informal Introduction to the Research Problem

An initial inquiry into personal and social values and their socio-psychological links with being woman or man led, after some fashioning and re-fashioning, to this dissertation. What seemed, at first, more a question of measuring sets of personal and social values held by women and men was later recast as a question pertaining to women's and men's perspectives toward one social value, peace, and to the processes of social influence that may serve to guide and to promote a particular perspective on this value by groups of women and men. The following discussion will introduce the development of the research, highlighting, along the way, pertinent theoretical and empirical sources that were used during the formulation of the problem.

A number of theoretical and empirical considerations intervened between the first and the last formulations of the research problem. To begin, a review of value surveys was undertaken, starting with Rokeach's (1968, 1973) twofold classification and measurement scheme of terminal values (preferable end-states of existence) and instrumental values (preferable modes of conduct). Instrumental values were presumed to be the means to bring about terminal values, an idea that Rokeach appears to have gained from Lovejoy's (1950) philosophical writing on terminal and adjectival values, although in the case of Rokeach's scales this remains a dubious distinction.

Rokeach's value survey seemed to offer a promising measurement until it became increasingly apparent that while the two scales were bridged in theory they remained disconnected in practice. Research conducted to assess sex differences on the *Rokeach Value Survey* turned out numerous analyses of the differences between the sexes in their respective ranks on the value scales, with few integrative interpretations of either the differences obtained or the relationship between instrumental and terminal values (e.g., Feather, 1984; Linder & Bauer, 1983, 1984;

McCarrey, Edwards, & Jones, 1978; McKernan & Russell, 1980; Rokeach, 1973; Ryff, 1979, 1982; Tobacyk, 1979; Vecchiotti & Korn, 1980). Additional problems with his value scales also became evident. The value domains themselves seemed less than representative of both women and men, particularly the instrumental set in the light of recent feminist writings (see, for example, French, 1985; Pearsall, 1986), not to mention the problem of differential social evaluations placed on values traditionally associated with women and with men (e.g., Laws, 1979; McKee & Sherriffs, 1957), or the problem of the meaning attached to the values by different social groups. On a psychometric note, there were problems related to the ipsative nature of the rank-order measurement format (see, for example, Cooper & Clare, 1981; Moore, 1975; Rankin & Grube, 1980).

Other value surveys, such as Vernon and Allport's (1931) personal values test, subsequently revised to Allport, Vernon, and Lindzey's *Study of Values*, and Gordon's (1976) *Survey of Interpersonal Values*, presented their own limitations, and, in the end, seemed better suited to a focus on the identification of people's values (see, Zavalloni, 1980, for a comprehensive, critical review of value measurements). This early exploratory effort into the measurement of values was discontinued, leaving a marked dissatisfaction with this type of approach: What, after all was measured and tabulated, could be said about the matter of diverse or similar sets of values if they were studied in isolation from each other and from acts, objects, or issues (personal or social)?

It is pertinent to return to the philosophical writings of Lovejoy (1907), who raised the question as follows:

For if a psychology of the moral consciousness is the proper beginning of all profitable ethical theory, the psychological question first of all calling for consideration under that head would seem to be: How does self-consciousness affect or transform desire and impulse?....what is the relation of those desires and interests to moral conduct? (p. 30)

Two desires, referred to as the desire for terminal values and the desire for adjectival values, were identified and distinguished by Lovejoy (1950) as follows:

The one is the desire for states-of-things which, at the moment of choice, are conceived by the chooser as *about-to-be* valuable, as eventually affording satisfaction to the agent, or to somebody, *when realized through* the act; the other is the desire of the chooser to be able to think of himself as having or manifesting qualities *in* the act which, *at the moment of choice*, he can regard with satisfaction or at least without dissatisfaction, as *characterizing himself as agent* (pp. 596-597).

According to Lovejoy, philosophical thought had, for too long, concentrated its efforts on a study of *ends*, or terminal values, thereby neglecting an agent's present desires manifest in adjectival values, an effort in error given that "it is by virtue of the desire for adjectival values that man (sic) is a moral agent" (p. 599). The interaction between the desire for adjectival values and the desire for particular terminal values is, in Lovejoy's words, "the stuff of moral experience" (p. 599).

Whereas the philosophical ideas advanced by Lovejoy (1950) have not been adhered to in their entirety for the development of this research, his ideas have nonetheless continued to have their hold. Attention to the actor, or moral agent, moved into the foreground, coupled with a view of an actor's values as dynamic, as means, and thereby joining personal and social values. When applied to women, men, and their values, these ideas led to revising the research problem to ask how different "adjectival" values held by agents may bear with them different implications for similar "terminal" values. To make this example more specific, consider the possibility that women and men may use different means to achieve the terminal values of "a world at peace" or "freedom", listed on Rokeach's scale, even if they assign equivalent ranks of importance to peace and to freedom. With respect to peace, men may tend towards personal values shown in strength and control whereas women may show a tendency towards values manifest in interdependence and nurturant caring. In the case of freedom, values for men may reflect acts of

independence in contrast to women whose values may reflect efforts towards liberation (freedom to versus freedom from).

Another way to exemplify this is by drawing on the two moral orientations articulated by Carol Gilligan (1982) in her research on women, men, and their resolutions to moral dilemmas. Female and male responses to a standard, hypothetical moral dilemma (Kohlberg's well-known Heinz dilemma) were observed to differ in their orientation to the moral problem and in their resolutions to the dilemma, leading Gilligan to posit two moral orientations: one of justice and one of care. What is of interest here is that these two orientations were voiced by females and males in response to the dilemma containing a value conflict between life and property, with each orientation serving to redefine the moral dilemma and to guide the resolutions. Subsequent research by Lyons (1983) lends support to Gilligan's coincident proposition that these orientations are also related to women's and men's different conceptions of the self as moral agents. It was thus thought that Gilligan's moral orientations offered a useful guide to the study of values of women and men.

Feminism adds yet an additional component, sensitizing the study of values to the socio-political processes of social influence that serve to advance the values of certain social groups (e.g., male, middle-class liberals) over those of other social groups.¹ As feminist inquiries into the social construction of psychological knowledge have shown, the voice of women has often been silenced by theories developed on the basis of male norms, leaving many of women's experiences either unaddressed or expressed as deviations from male norms (e.g., Gilligan, 1982; Weisstein, 1971; Weskott, 1979). But few researchers have addressed themselves to

1. While it is acknowledged that *feminism* and *feminist* represent plural rather than singular sets of interests and beliefs, these terms are nonetheless most often used to connote, in psychology at least, a unified interest in the differential power ascribed to women as compared to men, and the social and psychological consequences that ensue from their oppressed status. No attempt has been made to define specifically the use of these terms, due first to the inherent difficulties this would pose and, secondly, because few of the researchers or scholars present such distinctions in their own work.

whether social influence processes in the context of small groups function in a similar fashion to promote certain values or a particular moral orientation. Here we have a dual interest in social influence: Whose voice is heard?; and, What is the content conveyed by the message?

It is, however, in the context of small groups of women and men, together and apart, that we will begin to elaborate a social psychological understanding of those forces and/or conditions of social influence that encourage or discourage voices. In an attempt to incorporate social influence processes in this research, small groups of members of the same sex and groups comprised of members of both sexes have been included. This represents an important departure from previous studies that have examined the values or moral orientations of women and of men on the basis of individual responses. Research on small groups has remained largely uncharted.

The various components brought forward in the preceding discussion were combined to formulate the two research studies constituting this dissertation. Stated in general terms, the research involved an exploration of women's and men's responses to one social value, peace, with peace being set within the context of the issue of the nuclear arms debate.² Small groups of women, men, and women and men together were asked to complete a number of measures, individually and as a group, designed to assess a variety of nuclear-related concerns and to obtain their position and their reasoning on the nuclear arms debate.

Each area of interest to the research studies, peace, moral orientations, and small groups and social influence, will now be considered to elaborate on the development of the research hypotheses, which will be presented subsequently.

2. It is acknowledged that the meaning of "peace" is both more abstract and multifaceted than the context within which it is used in this dissertation. For the present research, it has been construed within the more narrow context of the nuclear arms debate.

Women, Men, and Peace

Perhaps it is best to begin this discussion with a few words about why peace was chosen as the social value for study; indeed, a number of different social values could be pursued to examine women's and men's relation to them. The study of peace, with its pressing and vital significance, offers a contemporary social issue on which most people share a degree of informed awareness, as well as representing an issue that carries with it a secondary, or latent, debate about whether (and how) women's and men's approaches and contributions to it differ, including the representation of women and men in formal, political structures.

Differences in Beliefs and Attitudes

Various indices have been drawn upon to speak to the differences between women and men on a diversity of facets related to the issue of peace. According to Abzug (1984) in her review of public opinion polls and the "gender gap" on economic, peace, and environmental issues, women tend towards a pacific position more than men on war and peace issues. Boulding (1984) puts forth a similar argument for the "gender-gap" in peace-related issues, stating that women have historically been more opposed to war than men, even though, at times, they may have *"cooperated with war"* (1984, p. 1). She also draws on public opinion results over the past three decades in Europe and North America, summarizing women's stance as more strongly opposed to "military spending, military intervention, and environmental exploitation" than men's (p. 1). Barlow and Selin (1987) report a similar finding in Canada, with public opinion polls showing more women than men opposed to militaristic options on peace and security issues. Their focus, however, is on a different facet of sex differences in the area of peace and security: whereas women comprise a majority in the peace movement in Canada (estimated at 60 - 70 percent), they are minimally represented in the policy-making body of Canadian arms control, a close-to-universal trend. They conclude that at "both governmental

and non-governmental levels, in arms control policy-making, research, education, and negotiations, women are consistently found in smaller numbers than men, if present at all" (p. 2).

Two factor analytic studies lend additional support to the claim that women and men differ from each other in their attitudes towards nuclear war and disarmament. Silverman and Kumka (1987) predicted that the factor structure for females' and males' attitudes towards nuclear-related issues would differ, and that males would be more "pro-force" than females. Their results, based on telephone surveys in Manitoba, Canada, supported their predictions. A three-factor solution was obtained from females' responses, consisting of an *economic* factor (favorable attitudes towards defense spending), a *militarism* factor (favourable attitudes towards strong nuclear force), and a *pacifism* factor (emphasis on civil defense, a belief that unilateral reduction of weapons will reduce the threat of nuclear war, and a belief in likelihood of a nuclear war before the year 2000) in contrast to a two-factor structure for males, consisting of a *militarism* factor (increased defense spending, support for Cruise Missile testing, strong nuclear force) and an *anti-militarism* factor (belief that unilateral reduction in arms will reduce the threat of nuclear war and unfavourable attitude towards testing the Cruise Missile).

Mean differences on three factors, derived from the total sample, indicated that females and males differed in their responses on the *economic* and *pacifism* factors, with a greater mean for males on defense spending and a lower mean for them on pacifism; no differences were obtained for the *militarism* factor. On the basis of their results, they argue that the orientation of females seemed more complex and included the human dimension, involving issues of survivability, civil defense, and the likelihood of war, whereas the orientation of males seemed more singular in its focus on force, shown in a pro- or anti-militarism stance.

Newcomb (1986) obtained sex differences on his fifteen-item *Nuclear Attitudes Questionnaire* (NAQ), including issues of war, weapons, and energy, administered to a group of female and male adolescents during the last wave of his longitudinal study of adolescent development. Four factors were derived from his analysis: *nuclear concern*, *nuclear support*, *fear of future*, and *nuclear denial*, with women's responses indicating more concerns, less nuclear support, a greater fear of the future, and less nuclear denial than men's. (Women and men were observed to differ on twelve of the fifteen attitude items, distinguished, in general, by women giving stronger reactions and showing more pessimism than men.) In a follow-up study, for which background and personality measures were included, gender or sex of the respondent still provided the strongest account of the differences (Newcomb, 1988).

Sex and/or gender-role orientations have not, however, consistently differentiated attitudes concerning nuclear weapons, nuclear war, or nuclear power. Jensen (1987), for example, found such differences on only one of three factors. Males indicated less support than females for U.S. military restraint in the event of a Soviet military threat, and this was also predicted by masculinity scores; high-femininity females showed neither support nor nonsupport, while low-feminine females were nonsupportive (Jensen, 1987). No differences, however, emerged regarding either the development of nuclear weapons or the use of nuclear weapons in the case of military confrontation. Elsewhere, older male adolescents reported less nuclear-related worry than both their female cohorts and younger male and female adolescents, with adolescents' overall nuclear-related worries appearing to be no more salient than other day-to-day ones (Hamilton, van Mouwerik, Oetting, Beauvais, & Keilin, 1988). In two interrelated studies concerned with ascertaining what factors set apart those who support disarmament from those who support armament policies, Feshbach, Kandel, & Haist (1985) report only a marginal sex

difference in the first study, with women's and men's support of a moratorium on nuclear weapons being almost equal. In contrast, Yankelovich and Doble (1986), in their review of Lauer's public agenda survey, indicate that more males than females are represented in the group of "threat minimizers" (regard nuclear war as an unlikely event and prefer military strength over negotiation), and in the group favoring conciliation over confrontation (U.S. should initiate a reduction); females were more strongly represented in the group considered peaceful and non-assertive in their strategic thinking (peaceful co-existence, "live-and-let-live"). Additional distinctions between the latter two groups were found in the view of the Soviet threat in military terms, with little hostility shown towards the Soviet Union, for largely male groups, as compared to a stronger opposition to communist ideology and more concern with the possibility of nuclear war in groups composed primarily of women.

While women's weaker support of nuclear power plants than men's has received somewhat more consistent empirical support, including women's attitudes being related to a greater concern with possible dangers to human safety and health (e.g., Brody, 1984; Eiser, Spears, & Webley, 1989; Passino & Lounsbury, 1976), they are not as easily distinguished on some types of energy policies, such as "soft path policies" (e.g., solar heating, small scale wind generation of electricity and heat), as others, such as "hard path policies" (e.g., coal, oil, or gas energy sources), for which women show less support than men (Longstreth, Turner, Topliff, & Iams, 1989).

Polyson, Stein, and Sholley (1988) report that sex was the only demographic characteristic to differentiate consistently survey responses from members of the American Psychological Association (APA). Their survey consisted of a number of questions concerned mainly with APA's Council of Representatives' resolution to endorse a bi-lateral freeze on nuclear weapons and with whether members thought APA should expand its current involvement in this issue. The nuclear freeze

resolution and the proposal for increased APA involvement received stronger support from those who indicated greater nuclear-related concerns, rated the likelihood of survival as low, conveyed little or no desire to survive an all-out nuclear war, viewed the event of a nuclear war by the year 2000 as possible, related more pessimism than optimism about the percentage of survivors, expressed the opinion that public involvement decreases the likelihood of nuclear war, reported verification terms as essential to arms control negotiations, disagreed more with the idea of modernizing or building-up arms for arms control, and agreed that a Soviet-American freeze on nuclear weapons was verifiable. Of these items, women psychologists were more likely than men psychologists to support a nuclear freeze as well as an expansion in APA's activities related to this issue. In addition, women indicated a lower chance of surviving a nuclear war than men, showed less of a desire to survive, more often declined to offer predictions about the likelihood of nuclear war by the year 2000, gave lower estimates of the percentage of survivors, and responded to the question of verifiability with "don't know" more often. Polysen et al. drew upon Gilligan's (1982) theory of care and justice moral orientations to interpret these sex differences.

Taking a somewhat different approach, Boulding (1981) gathered information via surveys and interviews from 51 women in 21 countries who are engaged in research in the area of disarmament and national security. Two broad categories were developed to reflect their views: new conceptual frameworks, emphasizing research on the concept of national security, the political, social, and economic conditions that would make disarmament possible; and, new social order, consisting of a search for new research priorities, such as new social structures, values, and problem solving skills, while rejecting development(s) based on the military. It is of interest to note that women were divided on the question of whether they had a distinct perspective as women; those who did offer this belief

related it to their marginal status both in this field of research and in their socialization experiences, and determined that it enabled their analytic power and "the interpretation of data in its human dimensions and its human consequences" (p. 39).

While research on women's and men's nuclear-related beliefs and attitudes does not offer a consistent set of differences, it does cohere in the direction of those obtained. This discussion will now turn to authors of different theoretical and analytic perspectives, which may be used as an interpretive framework for women's and men's attitudinal differences on issues of peace and security.

Conceptual Connections

To account for the differences between women and men on war and peace issues, researchers often turn to reasons of biology, socialization, or women's distinctive "standpoint" to explain their findings, noting that one of the factors, or a combination of them, is largely responsible for shaping what has come to be referred to as women's distinct perspective. Biological explanations call upon women's child-bearing capacity as encouraging values concerned with protecting life and life-giving qualities; socialization explanations refer to the differential expectations and rewards associated with differential sex-role development for females and males; a distinctive standpoint explanation, while not exclusive of the former two, draws on the correspondence between women's social position and metaphysical attitudes, epistemological principles, cognitive styles, and values (see Ruddick, 1987). All three promote a set of "women-centered" values, and it is this set of values, including nurturance, interdependence, connection, and caring, that is used to depict women's distinct perspective; Ruddick (1987) refers to this as thinking maternally about peace, which she describes as involving preservative love and non-violence, and which she sees as "at odds with the abstractions of war" (1983, p. 483; for an historical appreciation of women's non-violent, direct action see

Carroll, 1989). Many authors advocate that women should form a stronger representation in formal organizations dealing with peace and security issues because they would bring this distinct perspective with them (e.g., Brock-Utne, 1985; Reardon, 1985); others agree that more women should be present but do not lend their support to this type of reasoning (e.g., Segal, 1987; Selin, 1988), challenging instead the equation of woman with pacifist, man with warrior (see, for example, Elshtain, 1987, for an analysis in depth).

Connections drawn by contemporary feminists between patriarchy, violence, and war have revived conceptual links put forward by early twentieth century feminist thinkers (Reuther, 1985). Arguing from a materialistic viewpoint, As (1982) locates the different perspectives of women and men toward issues of war and peace in their differential relation to military acts of destruction, to territories (male-controlled ownership), and to the army. Other feminists draw connections between violence, power, and war, contending that women and men hold different perspectives on peace and war because their relation to and experience of power and violence have differed historically (e.g., Roberts, 1984). Reardon (1985) explores the conceptual links between sexism and the war system, stating that both of them "arise from the same set of authoritarian constructs" (p. 10). She calls for a transformation in world values guided, in part, by feminism, arguing that "peace and patriarchy are antithetical by definition" (p. 37). As with other areas of research, Reardon finds that little, if any, peace research has incorporated a feminist perspective. The transformation that she envisions thus requires change on the part of women and men, as well as in extant social structures. Elshtain (1986), in her comparative analysis of war and political discourse, brings Arendt's philosophy to bear on the dilemma of the nuclear arms race, contending that from this perspective comes "unilateral initiatives to break the cycle of vengeance and fear signified by our nuclear arsenals" (p. 111).

In concert with these views is Easlea's (1983) thesis concerning the relationship between masculinity, scientists and the nuclear arms race. Masculine values, such as control, power, competitiveness, aggressiveness, and the need for status, prestige, and profit, according to Easlea, have shaped both science and scientists, and, concomitantly, the course of nuclear war technology. He moves on to assert that masculinity is the context within which the nuclear arms race is best understood. Cohn (1987), who participated in a summer workshop on nuclear weapons, strategic doctrine, and arms control and followed this up with a year of study at a university's centre on defense technology and arms control, writes about the overwhelming presence of sex and gender assumptions both in the social relations and the language of those she refers to as defense intellectuals. She listened to and learned to speak "technostrategic" language, which she describes as rife with abstractions, euphemisms, and sexual metaphors. Through this language the reality of human destruction is surrendered to a discourse that takes nuclear weapons as its subject, leaving out the discourse on humans, or victims. The abstractions and images she identified include, for example, references to "clean bombs", collateral damage (human death), peacekeepers (Reagon's term for the MX missile) or "damage limitation weapon" (analysts' term), "surgically clean strikes" (accurate counterforce attacks), and strategic stability, which is the closest term Cohn could find in relation to peace (the word "peace" did not enter into their discourse); sexual (phallic) images include, for example, vertical erector launches, thrust-to-weight ratios, soft lay downs, deep penetration, advantages of protracted versus spasm attacks, patting the missile, and, as one military advisor put it, "releasing 70% to 80% of our megatonnage in one orgasmic whump" (p.693); domestic images were heard in phrases such as marrying weapons systems, or coupling warning and response systems; the connection between male birth and creation evinced in references to bombs as male progeny, female ones denoting

"duds", transforming destructive inventions into creative rebirth. Cohn writes that this language both reflects and shapes the American nuclear strategic project, and that the sex-related metaphors impart a sense of sexual domination, an argument similar to Easlea's. The task before antimilitarists or peace activists, says Cohn, involves both a deconstruction of this current language use and a reconstruction of alternative conceptions of rationality.

Brock-Utne (1985) refers to the personal correspondence exchanged between Bertha von Suttner and Alfred Nobel to provide what she considers a good illustration of a feminist versus masculine perspective on peace policy. Nobel seemed to be of the opinion that he and von Suttner were, reports Brock-Utne, "fighting for the same cause but by different means"; von Suttner disagreed and attempted to encourage Nobel to donate "some of the money he had earned on dynamite to the creation of a peace prize" (p.42). According to Brock-Utne:

They both claimed that they were working for peace, they both even declared themselves pacifists....He claimed that he was doing more for the maintenance of peace with his dynamite and canons than she was doing through all her pacifist writings and organization of peace conferences. She worked to mobilize opinion against the institution of war, against the manufacturing and use of deadly weapons. She wanted to do away with all arms, with all instruments of murder. (p. 146)

It would be remiss to leave this discussion with the impression that a perspective of care is the sole prerogative of feminists, or women; indeed, others who may or may not declare themselves feminists have put forward similar conceptualizations in their views of means toward peace. Staub (1988), for example, argues that the reduction of intergroup hostilities and war may be brought about by transforming "ideologies of antagonism" into a prosocial orientation reflective of nonaggression, caring, and cooperation in human relations within and between groups, or nations (p. 83). And, de Rivera and Laird (1988) contend that when love

dominates fear, the focus shifts away from fear for the self to caring for others, which, in turn, enables cooperation.

Without resorting to any claims that "women-centered" values represent inherent or essential qualities of being woman, it is possible to interpret the call of feminists as one of social re-valuation, in place of the historical de-valuation, of those values that are typically associated with being woman. To state this in somewhat different terms, the idea of bringing "women-centered" values to this issue is to take those values that have traditionally been thought of as important to the care-taking of the "private" realm and to incorporate them in the "public" domain. This also brings to light the importance of considering the social influence exerted by social groups to promote certain perspectives or orientations over others.

For the present purpose, as mentioned previously, Gilligan's (1982) framework of two moral orientations, one based on care and the other on justice, has been adopted because it captures many of the distinctions considered above, and, at the same time, offers a useful set of guidelines from which one can interpret women's and men's responses to moral problems, in this case, the moral dilemma of the use of nuclear weapons as a means towards peace.

Women, Men, and Moral Orientation

After a number of years teaching and researching identity and moral development, many of which were undertaken in collaboration with Lawrence Kohlberg, Carol Gilligan began to explore further the distinctiveness she had been hearing in women's voices as they spoke about themselves and about moral problems. Rather than dismissing the disparity she had started to detect between women's perspective and Kohlberg's model of moral development, she challenged the model instead, linking what had been regarded as a problem, or deficiency, in women's development with the exclusion of women in the empirical construction of

the theoretical model. This critical examination, in conjunction with her research efforts, led Gilligan (1977/1986, 1982) to propose two moral orientations that have come to be referred to as "justice" and "care". The transformation of a model of moral development based on male norms to one that embraced both women's and men's perspectives as being of equal validity provides an analogy for those who debate the value of "women's" versus "men's" perspectives on issues of peace and security; in fact, critics of traditional approaches to these issues often rely on Gilligan's research to elucidate their arguments (e.g., Reardon, 1985).

Criticisms of Kohlberg's theory of moral development, however, did not dawn with Gilligan's articulation of women's moral development. A number of critiques of his theory had arisen prior to Gilligan's pronouncement of women's place in Kohlberg's theory, presenting their own challenges both to the socio-political bent in the content of the different levels of moral development and to the concomitant implications of the association between levels and political ideology for diverse social groups (e.g., Bloom, 1977; Fishkin, Keniston, & MacKinnon, 1973; Haan, Smith, & Block, 1968; Hoffman, 1975; Holstein, 1976). Simpson's (1974) critical appraisal registers a strong protest against the cultural bias inherent in the Western philosophical content of Kohlberg's moral stages, as well as illustrating how this notion of universality limits explanations of different groups. The place of women in Kohlberg's moral stages exemplifies the relationship between moral development and cultural influences, argues Simpson, with women constituting the strong majority of adults of stage three reasoning due to its emphasis on interpersonal relations. According to Simpson, moral content many derive from different experiences in different groups, and may reflect the values and training of one's social group affiliations. She seems to pinpoint the heart of the matter in the following statement:

What matters is not that there are thirty basic categories, concepts, or principles which are widely

shared. (Perhaps there are more? Fewer?) If we wish to understand the actual process of morality what concerns us is *how* these are used, by *whom* (the old? the male? the sick? the married?) and *when* (p. 86).

What Gilligan's formulation of two moral orientations seems to offer, then, is a much needed corrective for the more singular, traditional view of moral development, at least insofar as women and men are concerned. One orientation, termed the "justice" orientation, reflects a primary concern with equality and rights; based, for the most part, on Lawrence Kohlberg's developmental model of moral reasoning. The second orientation, referred to as the "caring" orientation, is the one that has challenged the theoretical precedents on which Kohlberg's theory rests. This latter "caring" orientation is concentrated in a relational context that takes interdependencies, interpersonal attachments, responsivity, and connection as its outstanding qualities. Gilligan (1987a) has not equated the two orientations with being either female or male, although she does point out that the "caring" orientation would virtually fall by the way if women were omitted from the research sample.

Included in Gilligan's theoretical advancement of two moral orientations is a coordinate understanding of modes of self-definition and modes of moral choice. From this perspective, the moral agent acts as the point of departure for understanding moral conflict and moral choices, with the development of self being regarded as inextricably involved with morality. Women's and men's voices, different and distinct, speak to their versions of self-identity, and from these versions a unitary view of morality diverges into two moral orientations: one of justice and one of care (see, for example, Ford & Lowery, 1986; Lyons, 1983; Pratt, Golding, & Hunter, 1984; Pratt & Royer, 1982).

Justice Orientation

The moral voice that signifies this orientation is one that extends from a view of the self as separate and objective, and speaks to values of equality, reciprocity, and rights in a language of duties and obligations derived from principles of moral justice (Gilligan, 1986a). Moral development proceeds from an egocentric emphasis through a societal focus to a universal ethical perspective, with the culmination in the universal ethical level being evidenced by the use of principles as criteria to guide the resolution of moral conflicts in what is thought to be an impartial manner (Gilligan, 1977/1986). The moral agent is pictured as an individual who by means of formal reasoning derives principles that will uphold moral and personal autonomy; the idea of moral and personal autonomy follows, according to Kittay and Meyers (1987), from the notions of social contract and personal liberty found in the justice tradition in philosophy. From this perspective, an individual seeks to uphold individual rights from a position of non-interference, and approaches conflicting claims between self and other in much the same fashion. At the highest stage, self-chosen rights are construed in terms of universal principles of justice. Rights are conceived of in the abstract, with competing rights being weighed and assessed in terms of their logical priority (Gilligan, 1977/1986). In a recent discussion of moral orientations, Gilligan (1987a) describes the justice perspective as follows: "...self as moral agent stands as the figure against a ground of social relationships, judging the conflicting claims of self and others against a standard of equality or equal respect (the Categorical Imperative, the Golden Rule)" (p.24). Viewed in this way, the justice orientation is understood as a perceptual focus, which is not in opposition to or a complement of the "caring" orientation.

Caring Orientation

The values of interdependency, attachment, affiliation, care, and responsivity preponderate in this orientation, with each value defined in the context of interpersonal relationships and human connection (Gilligan, 1986b). Commensurate with these values is the definition of self that develops not through progressive separation of self from others, but rather in a context of continuing interpersonal relations and affiliations. Gilligan (1977/1986, 1982) lays out the structural components of the development of this moral orientation in a way that resembles Kohlberg's tri-level model: An initial egocentric focus gives way developmentally to societal concerns and eventuates in a universal perspective. But each one of these stage-like progressions is informed by a different conception of morality as compared to the justice tradition. Gilligan (1982) states that the moral concerns within this orientation are conveyed in a language of selfishness and responsibility, and that in place of the more formal logic used in the justice orientation is a psychological logic of relationships. The initial egocentric focus involves caring for the self, in order to ensure survival, which upon identification as selfish leads to a different understanding of care and connection in terms of responsibility towards others, whereupon care and concern are shifted to those seen as dependent and unequal. This latter focus, after a recognition of the exclusion of self, becomes elaborated into a system of care for self and other as interconnected and hence interdependent: "Care becomes the self-chosen principle of a judgment that remains psychological in its concern with relationships and response but becomes universal in its condemnation of exploitation and hurt" (1982, p. 74). Once again this orientation does not negate concerns found in the justice orientation. Instead, it constitutes a shift in perceptual focus with "relationship" as the figure (Gilligan, 1987a). This perceptual shift gives rise to a different conceptualization of the moral dilemma and the consequent moral choices.

Each orientation leads to different ways of thinking about morality, moral problems and moral choices. When the moral dilemma is recast as a question of how to maintain human relationships and avoid exploitation and hurt, the dilemma is transformed into a problem of how best to care for those involved. In contrast, the dilemma cast as a question of rights points to concerns about human relationships in terms of fairness and individual rights, standards and principles derived from a logic of justice. The moral dilemma, therefore, becomes changed, differentiated by the perspective in the moral orientation. With the shift in perspective from a justice to a care orientation, comes a shift in the perception of what constitutes the moral problem.

Another distinguishing feature between the two orientations was observed by Gilligan (1982) in the responses of women whose primary orientation was one of care. This distinction was based on the observation that women sought to fill in the gaps in the hypothetical situation; that is, the sketchy depictions of the hypothetical characters were filled in by requests for more information or by fleshing out the characters and their relation to the situation. In other words, women tended to situate the dilemma within a context of particularized relationships which Gilligan (1982) referred to as their "insistence on the particular" or "contextual relativism".

The tendency to associate the search for contextual details with a care orientation has been challenged, on the one hand, by Friedman (1987) who asserts that this association has more to do with narrow depictions in hypothetical dilemmas than with a particular focus on care or responsibility and also by Flanagan (1982a, 1982b) who states that contextual relativism "picks out cognitive skills, not moral ones" (p. 529). On the other hand, Belenky, Clinchy, Goldberger, and Tarule (1986) see the questions raised by women as pointing to their sensitivity to context and situation:

They [women] insist on a respectful consideration of the particulars of everyone's needs and frailties....They do

not want to neglect the "practicalities of everyday life" for the sake of abstract justice or for the illusory search for "some kind of end all, be all, cure all" (p. 149).

Benhabib (1987) discusses this distinction in terms of the "generalized" other, associated most strongly with the traditional justice orientation, and the "concrete" other, corresponding with the care orientation.

Both moral orientations have been explored for their theoretical contributions to moral philosophy. Friedman (1987), for example, contends that Gilligan's considerations of care and relationship expand the range of moral reasonings, regardless of whether they are gender-related or not, and thus offers in her critical examination theoretical support for these facets in moral psychology and moral philosophy (also see, for example, Tronto, 1987; Shapiro & Smith-Rosenberg, 1989). Held (1987) follows up on the theoretical implications of Gilligan's thesis for moral theory and argues that "feminist moral theory is needed to provide the basis for women's claims to equality" (p. 113). She explores this need in terms of the division of labour, exemplifying the shortcomings of traditional moral theory for certain relationships, such as mothering. Justice and care as moral orientations were further distinguished by Benhabib (1987) as reflecting the time-honoured "public" and "private" spheres; a dichotomy that has been fostered by universalistic, contractarian moral philosophy that upholds the "public standpoint of justice", thereby relegating the experience of women to the private domain and excluding this moral standpoint from moral theory. Addelson (1987), however, criticises extant research on both orientations as promulgating the study of individuals' perspectives as representative of social group moral concerns. She proposes, instead, the use of a symbolic interactionist approach to the study of moral explanations.

Research evidence garnered thus far provides a measure of empirical support to Gilligan's proposition of two distinct moral orientations, to an association

between moral orientation and sex of the moral agent, to the tendency of people to focus on one or the other orientation (even though they may be able to produce both), and to an association between moral orientation and the type of moral dilemma, with the latter serving to sensitize moral orientation (e.g., Bussey & Maughan, 1982; Donenberg & Hoffman, 1988; Gilligan, 1986b, 1987a).

The question of moral discourse and moral orientation frames the second study in this dissertation by asking this: Which moral voice --- the one of care or the one of justice --- is encouraged or discouraged when women and men are in a joint discourse about a particular moral problem? Considerations of social influence processes served to turn this more general question into more specific ones: Will the group "voice of reason" reflect social dominance patterns with the voice of care yielding to the voice of justice? Or, will the discourse facilitate an integration of both voices?

Small Groups and Social Influence

As mentioned previously, an interest in social influence processes was fostered by a feminist awareness of how socio-political dynamics play an important role in the advancement of certain values or perspectives by social groups. In 1952, social psychologist Solomon Asch expressed an analogous relationship thusly:

Independence and yielding are at the same time social events and actions having deep personal significance; rarely can one see more clearly the intimate unity of the personal and the social (p. 496).

By drawing on the notions of the unity of the personal and political, or the personal and the social, it was thought that a social psychological study of social influence processes would require at least two considerations: one concerning the conditions of social influence attempts by group members (group dynamics); and, one concerning the content or ideas that are promoted by the group (group perspective).

Social Influence and Psychological Sets

Social psychological study of social influence during the 1950's gave rise to a number of conceptual schemes, each with its own terms of reference and accompanying definitions. To name a few, Festinger (1950) construed two main types of pressures in terms of *social reality* or *group locomotion*; Asch (1952) distinguished *structural* from *conventional* types of consensus; Thibaut and Strickland (1956) conceptualized social influence processes within the framework of *task* and *group* psychological sets; and Deutsch and Gerard (1955) formulated a distinction between *informational* and *normative* types of social influence. While these conceptual schemes carry with them their own specifications, they converge on at least two foci: one on information or evidence about reality, and the other on social relations amongst group members.

Two of these classic social psychological studies provided the basis for the development of psychological sets used in the present research. Thibaut and Strickland's (1956) *task* set (view of the group members as sources of information or "mediators of fact") and *group* set (view of group members in terms of maintaining group relations) formed the primary frame of reference. These distinctions were considered reflective of at least two psychological sets a person may use in her or his assessment of group members' communications, providing, in this sense, an orientation for the individual to the group. Both psychological sets were induced by instructions, and their differential effects on social conformity were then studied; greater conformity was expected under the group set as compared to the task set. By varying the pressure to conform (false feedback about group members' confidence) and group composition (strangers versus friends), their research demonstrated that social conformity, in general, increased with an increase in pressure under group set, but not under task set; further, these differential effects were enhanced for groups of friends in the group set and strangers in the task set.

A conceptual parallel to the two psychological sets was found in Deutsch and Gerard's (1955) two *types* of social influence. They distinguished *informational* social influence, defined as "an influence to accept information obtained from another as evidence about reality", from *normative* influence, defined as "an influence to conform with the positive expectations of another"; both types of influence were thought to be operative in groups. Six hypotheses ensued from their conceptualization of social influence processes, each of which set out various conditions (e.g., face-to-face, anonymous, and group situations with self-commitment variations) that were thought to increase or decrease normative influences on an individual's judgments, and for which each received empirical support. Conditions that enhanced normative social influence included, for example, face-to-face group situations with either no or weak self-commitment variations (self-commitment variations involved private versus public judgements written on either paper or magic-pads).

Some support for the connection between psychological sets and interaction styles is found in Mann's (1961) research on task versus socio-emotional conditions. All male groups were presented with either task or socio-emotional problems in an effort to study their effects on individuals' types of interactions; it is mentionable that the instructions for the different problems closely resembled those of Thibaut and Strickland's psychological sets. Balesian categories of task-related and social-emotional behaviours were found to differ between conditions, accordingly; when subjected to a factor analysis, in combination with peer-ratings, a task prominence factor emerged for both conditions, whereas the factor likeability varied by condition in its defining behavioral measures. With respect to the latter factor, indicants of tension release (e.g., laughing and joking) were related to likeability under task conditions while agreement and avoidance of disagreement were associated with likeability under social-emotional conditions (also see, for example,

Kaplan and Miller, 1987, regarding types of issues and informational and normative influence behavior).

The underlying ideas found in both psychological sets and types of social influence have been retained in the present research, with their shared features abstracted to guide the development of two psychological sets; additional considerations for these sets were gained from Bales' (1950) *task* and *social-emotional* interaction categories and from traditional associations of Bales' categories with men and women, respectively. The terms *informational* and *relational* have thus been selected to correspond to these broad-based distinctions, with the expectation that an informational set would evoke instrumental or task-related communications, and relational socio-emotional ones; by these means, social influence demands were expected to be stronger under relational than informational sets. When considered in combination with small groups of varying compositions of women and men, the general hypothesis concerning the effects of psychological sets became elaborated to include the expectation that men would be more influential than women under the relational as compared to the informational set. This discussion will now turn to research bearing on the question of social influence processes between women and men.

Social Influence and Group Composition

Since these early studies of social influence processes, numerous studies have been conducted to look at the various conditions under which the tendency to conform is either increased or decreased, not the least of which has been attention to the sex composition of the group. Interest in the sex composition of groups was in evidence at least sixty years ago in South's (1927) study of its effects on committee efficiency. Approximately thirty years later, Tuddenham, MacBride, and Zahn (1958), for example, examined the effects of sex composition on yielding, and Strodbeck and Mann (1956) looked at how sex roles may affect jury deliberations.

Dion (1985) maintains that despite early attention to sex group compositions, sex group compositions were virtually overlooked by small group researchers until recent years. He attributes the basis of this oversight to both the predominance of male researchers and the military funding of early small group research.

When the sex composition of groups is included in studies of social influence, the predominant interest usually lies in whether women conform more often than men, testing the stereotypic beliefs that men are more influential, and women more influenced.³ A variety of factors have been brought to bear on the study of social influence processes between women and men, including, for example, comparisons between mixed-sex and same-sex groups (e.g., Reitan & Shaw, 1964), sex and gender roles (e.g., Falbo, 1977; Goktepe & Schneier, 1989), dominance behaviour in situations of mixed-sex and same-sex groups (e.g., Aries, Gold, & Weigel, 1983), differential sources of power (e.g., Johnson, 1976), self-confidence and social influence strategies (e.g., Instone, Major, & Bunker, 1983), task structure and content (e.g., Feldman-Summers, Montano, Kasprzyk, & Wagner, 1980; Sistrunk & McDavid, 1971), task structure and interaction styles (e.g., Mabry, 1985), sex-related status characteristics (e.g., Berger, Cohen, & Zelditch, 1972; Meeker & Weitzel-O'Neill, 1977; Ridgeway, 1981), and interaction styles in influence strategies (e.g., Carli, 1989; West & Garcia, 1988).

In a review of meta-analytic studies of social influence, Eagly (1987) states that the tendency of women to conform more than men is clearer in *group pressure* studies than in *persuasion* experiments, which, in turn, show slightly larger sex difference conformity effects than those obtained in studies not using group pressure

3. The terms "yielding" and "conformity" are often thought to carry a negative evaluation or to misrepresent the social act of cooperation as one of social conformity. What has been described as women's tendency to conform may also be thought of in the sense of cooperation or the tendency towards inclusion rather than exclusion (see, for example, Miller, 1976). The use of the former terms herein is related to the research tradition in social influence processes, with the acknowledgement that other terms may be more appropriate.

conditions (also see, Eagly, 1983). Eagly explains the stronger effect obtained in the group pressure paradigm as arising from the presence of an audience, drawing on the results obtained from two studies of the effects of sex and surveillance on social influence (also see, for example, Ruble & Higgins, 1976, regarding the "mere presence" of different sexes in the composition of groups). In one study, Eagly, Wood, and Fishbaugh (1981) observed that surveillance as opposed to non-surveillance conditions decreased conformity for males, but not for females; the tendency for women to conform was unaffected by surveillance conditions. Eagly and Chrvala (1986), in a second study, examined two status variables (sex and age) under the varying conditions of the presence or absence of surveillance. The results for this study were slightly different: younger males and females conformed more than older males and females, and their degree of conformity was unaffected by surveillance conditions. Females and males were found to differ only in the older age group under the condition of surveillance, with males' responses evidencing less conformity than females' responses. Eagly and Chrvala concluded that age acted as a stronger status characteristic than sex, but a qualification of this statement seems to be needed to consider the interaction shown in their results. The pattern of their results suggests that males gain status increments with age whereas females' status, in this study, remained static despite a change in age, based on the similarity between their conformity and that of younger males and females.

Becker's (1986) meta-analysis of social influence studies, based on the sample used by Eagly, also obtained sex difference effects for persuasion and group pressure paradigms, and as in Eagly's analysis, the effects were not consistent. In addition to the sex difference effects, Becker took the various features of the studies into account, observing that percentage of male authors, test length, size of the fictitious norm group and the types of outcome measures affected the size of the sex difference effect.

Social Influence and Interaction Styles

Group processes, or group dynamics, have also been analyzed to examine the effects of relative status and power of women and men, with most studies utilizing Bales' categories of *task* and *socio-emotional* behaviours (see Bales, 1950, 1970). Berger, Cohen, and Zelditch, (1972) argue that status associations are involved in the organization of social interactions; accordingly, sex may act as a status cue from which a number of general assumptions about sex-related characteristics are inferred (i.e., diffuse status characteristics). Group members regarded as higher in status will generally be expected to take the opportunity to perform more task-related contributions and will receive more expressions of approval and agreement (Meeker & Weitzel-O'Neill, 1977). Status variables such as age and sex have also been considered as predictive of the amount of participation (Baker, 1988).

Reitan and Shaw (1964), for example, examined whether stereotyped beliefs concerning men's dominant role and women's submissive role would affect either women's or men's tendency to conform in same-sex or mixed-sex groups. The results indicated that while women yielded more than men, in general, both sexes showed more conforming behaviour in mixed-sex than same-sex groups. Despite the inconsistent findings in two jury simulation studies of men's tendency to specialize in task behaviors and women in social-emotional ones and the similarity of their verdicts, Nemeth, Endicott, and Wachtler (1976) observed that group members still perceived men as more influential, rational, strong, independent, confident, aggressive than women, as well as seeing them as leaders.

Eagly (1987) also draws on status explanations to complement task and social-emotional sex-role expectations in the explanation of conforming behaviour: "The consequent perception of men as more assertive, independent, competitive, and self-confident than women results in a tendency for people to weigh men's comments more heavily than women's in forming opinions and for men to be less

accepting than women of others' opinions" (p. 98). Eagly goes on to say that the tendency of women to agree more readily with others may be a result of females' role demands for communal qualities.

When considering the relationship between interaction styles and social influence, same-sex group compositions have been found to evidence more stereotypic behaviors than mixed-sex ones, with the type of influence behaviour related to the sex of those one is attempting to influence (e.g., Carli, 1989). Women's and men's self-reports of types of influence strategies indicate that while they may differ in the absolute frequency with which they use different strategies, rank orders of their first-choice strategies are remarkably similar (e.g., White & Roufail, 1989). As a further qualification to this trend, both women and men have been found to conform more when the sex-relatedness of the topic and that of the influencer are in accordance (e.g., Feldman-Summers, Montano, Kasprzyk, & Wagner, 1980; Goldberg, 1975).

Ott's (1989) research brings to light the implications of sex-related domains for women and men who comprise either a minority or a majority. By looking at the professions of police work and nursing, two traditional professions for men and women, respectively, she was able to show that the consequences of being a minority are different for women and men. For policewomen, being in the minority brought with it disadvantages as compared to male nurses as a minority; in addition, responses to shifts away from minority compositions were experienced differentially. Men became more resistant towards women in the police force, while women in nursing changed their more favourable attitudes towards male nurses to more neutral ones. Ott concludes that men's responses were akin to keeping control over their male-related domains, and women's to sharing their domain with men.

Using a different approach to the study of social influence in small groups research, McGraw and Bloomfield (1987) incorporated individual differences

(gender orientation) and levels of moral reasoning to their study. They proposed two relationships between gender and moral reasoning, which they regarded as independent domains: masculinity was assumed to be related conceptually to the post-conventional level of moral reasoning (the highest level) and femininity was assumed to correspond conceptually with the conventional level (the third or middle level). They further hypothesized that individuals would be more influential and less easily influenced when these associations were matched (non-conflicted individuals) than when they were mismatched (conflicted individuals). Analyses of three social influences measures, objective influence (pre-and post-decision rankings), self-perceived influence, and attributed influence, supported their prediction of a relationship between level of moral reasoning, gender-type, and social influence, with compatible gender and moral reasoning levels indicating more influence.

Interaction Styles in Same-Sex and Mixed-Sex Groups

Other researchers have employed Bales' categorical units to analyse women's and men's interaction styles in same-sex and mixed-sex groups. Aries' (1976) focus, for example, was on how the sex composition of the group affected interaction styles. In her study, same-sex groups of women and of men were compared to groups consisting of both women and men over five experimental sessions, with each group's task being that of becoming acquainted with one another in the group. She observed differences both in the interaction styles of different groups and in the thematic content of their discussions. Exclusive male groups were found, over time, to establish a stable dominance order, to direct most of their communications to the group as a whole (exercise of power or influence), to discuss topics whose themes reflected competition, aggression, and superiority, and to discuss each topic or anecdote for short periods of time, jumping from one to another. Sole female groups, in comparison, were observed, over time, to show a greater flexibility in the

rank order of speaking over time, to direct more of their communications to individuals, to share more personal information about themselves in discussions, reflecting themes concerned with self, feelings, affiliation, home, and family and to spend more time discussing each topic before moving on to the next one. The results for the mixed-sex groups present an interesting contrast. In these groups, males both initiated and received more interactions than females (relative power), with fewer of their communications directed to the entire group as compared to all-male groups. Females directed more of their communications to male group members than to female ones, suggesting that the flow of communication followed status-associated lines. With respect to thematic content, males engaged in more discussions about themselves and their feelings as compared to their style in all-male groups; in contrast, women demonstrated a slight decrease in discussing topics concerned with the home and family. Aries concluded that women did not change their behaviour as much as men, and suggested that men may benefit more because mixed-sex groups allow for more variation in their behaviour.

In a more recent study, Aries (1982) examined whether women and men who were comparatively equal in their career-orientations would continue to show sex-stereotypic behaviour in groups. Pre-measures indicated that the two sexes did not differ with respect to dominance (CPI dominance scale) or to sex-role self-concepts (Personal Attributes Questionnaire). Same-sex and mixed-sex groups were presented with an ethical dilemma for discussion. Analyses of their interactions indicated that while women participated more than men in mixed-sex groups, interaction styles of both women and men continued to follow stereotypic specialization of socio-emotional and task behaviours, respectively.

In their examination of the relationship between sex and gender roles in the prediction of types of interactions, Jose and McCarthy (1988) found that group members high in masculinity were seen by other group members as more talkative

and as contributing the best ideas. Women and group members with high femininity scores were viewed as being more concerned with group feelings and harmony.

Introducing a modification to the study of interactions in same-sex and mixed-sex groups, Piliavin and Martin (1978) used a red or green light signal to discourage or encourage participation rates of either a male or a female member in mixed-sex groups. In the situation of females as the target in a mixed-sex group, males maintained their previous level of task behaviour while increasing, over the period of three separate discussions, their rate of social-emotional behaviours whereas females increased their task behaviours and decreased their social-emotional ones. A different pattern emerged when males were the targets. Over the period of the three discussions, males continued to increase their task behaviour and females their social-emotional behaviour, thus exaggerating their initial stereotyped behaviours (also see Oakes, 1962, regarding the reinforcement of Bales' response categories). Wood and Karten (1986) hypothesized that perceived competence underlies status distinctions, and manipulated group member's competence by false feedback designating either a female or male as the most competent group member. This manipulation countered the standard sex differences observed in task or social-emotional behaviour, thus lending support to their hypothesis. Moreover, according to Mabry (1985), variations in task structure and group composition differentially affect the amount of task and social-emotional behaviours.

As the foregoing presentation of studies shows, social influence in small groups is related to a composite of factors. While research on social influence and group composition lends few, if any, consistent predications on which to formulate hypotheses concerning types of interactions, differing as they do in group size, group history, ratios in mixed-sex groups, and tasks, most seem to agree that there are

some indications of differences in interactive styles and that attention should be directed towards the conditions of these differences.

In summary, the two types of social influence distinguished by Thibaut and Strickland (1956) and by Deutsch and Gerard (1955) correspond conceptually to Bales' (1950) behavioural categories of interactions in groups. Studies using Bales' interaction categories of behavioural analysis have identified the ways in which these categories are associated with traditional roles of males and females, including the differential status associated with the sexes and with these categories of behaviour. Typically, interactions considered indicative of task-directed contributions (opinions, suggestions, talkativeness) or of offering the best ideas are associated with greater influence; interactions representative of positive social-emotional behaviour (agreement, tension releasers, solidarity) or the asking of questions are related to lesser influence (e.g., Back, 1951; Bales, 1950, 1970); Bavelas, Hastorf, Gross, & Kite, 1965; Carter, 1954; Carli, 1989). By considering these conceptual links in the study of social influence, two facets were identified for use in the second study. One of these was the use of psychological sets, induced by instructions, to diminish or enhance the effects of social influences and the other was the use of behavioural and perceptual measures to examine social influence processes in groups of women and men.

General Overview of Studies Conducted

Four-member groups of women and men were asked to participate in a study concerned with how they thought about issues related to world peace and global security; the group compositions varied from groups consisting of same-sex members to groups of mixed-sex. The compositions of the mixed-sex groups were varied systematically from one female and three males through to one male and three females. These different combinations gave rise to five different group configurations.

Study one. The purpose of the first study was to examine differences between women and men on attitudinal measures of nuclear-related issues and nuclear concern. Group members completed two attitude measures on an individual basis. After they had completed their individual ratings, they were asked to complete a group rating of their group's overall concern about nuclear issues.

Study two. The purpose of the second study was to examine women's and men's perspectives on the issue of nuclear disarmament versus nuclear armament as a means to peace, given the context of the groups forming a Canadian student advisory committee to American students. Each group member was asked to determine his or her own stance on the issue, and to provide reasons in support. This was performed first on an individual basis, followed by a group discussion. The group's task was to determine both the group's position and its perspective on the issue.

Statement of Hypotheses

Study 1

The purpose of the first study was to examine whether women and men differed in their attitudes toward nuclear-issues and to establish whether the degree of concern towards nuclear issues differed for groups with different ratios of females to males. Based on Newcomb's (1986) findings, it was predicted that women's and men's ratings on the NAQ would differ on each of the four factors, *nuclear concern*, *nuclear support*, *fear of future*, and *nuclear denial*, with women expected to show more concern, less support, a greater fear of the future, and less nuclear denial than men. It was also predicted that women would rate their degree of overall concern as higher than that of men. Given the differences between women and men on issues related to peace and security, and all things being equal, it seemed reasonable to expect that as the number of women in the different group configurations increased, the degree of concern would also increase. (Other outcomes, given different assumptions, are, of course, conceivable.)

Study 2

As in the first study, analyses of responses to the NAQ were undertaken on the four factors to assess attitudinal differences between women and men. Responses to the degree of overall concern about nuclear issues were analysed for the purpose of looking at sex differences. The predicted direction of these differences followed those proposed for the first study.

Several predictions were formulated for women's and men's individual responses to the Nuclear Arms Dilemma. Based on the argument that more women than men display a tendency towards pacifism, it was expected that more women than men would adopt the position of disarmament. Based on the research by Gilligan (1982), it was expected that more women's reasons than men's reasons

would constitute a "caring" orientation in contrast to a predominant focus on a "justice" orientation in more of the reasons given by men than women.

The hypotheses for the group responses to the dilemma were more complex. Two over-riding questions were considered for the group tasks: (1) Does the choice of position change with a change in group compositions?; and, (2) Does the content of the group's reasons change with a change in group compositions? The general hypothesis, then, can be stated in terms of differences between the five group configurations: As the number of women relative to men in the different group configurations increases, the position of the group will shift to one of disarmament and the orientation of the group's reasons will reflect an increase in "care" responses. For those groups receiving the *informational* set, it was thought that there would be less clear-cut pressure to conform, hence lessening the social influence of men over the group's decisions by placing an equal demand on all members to be task-orientated. For groups receiving the *relational* set, in contrast, there would be a stronger request of conformity in terms of group unity, and, therefore, it was expected that women would tend to yield more to the influence of male group members. Given these conditions, it was expected that the general trend hypothesized above would be enhanced for groups in the informational set as compared to groups in the relational set.

Experiment 1

Method

Subjects

Eighty Carleton University undergraduate male ($N=40$) and female ($N=40$) students were recruited to participate in this study in return for one hour of experimental credits towards their Introductory Psychology course. Students were contacted by telephone to schedule a time for them to participate in one of five different group compositions. Four students who were previously unacquainted were thus assigned unsystematically to a four-member group composed of either same-sex or mixed-sex members.

The students' ages ranged from 18 years to 52 years, with an average age of 21 years. Fourteen (17 per cent) of the students stated that they had at one time belonged to an organization concerned with peace: ten (13 per cent) of the students noted that they were currently involved with a peace organization. Student interpretations of organizations concerned with peace were wide-ranging; including, for example, participation in the military, rallies, church groups, Green Peace, pro-life groups, and rock bands.

Group Compositions. Five different four-member group compositions were arranged by varying the ratio of females to males: (1) four females, no males; (2) three females, one male; (3) two females, two males; (4) one female, three males; and, (5) no females, four males. A total of 34 groups (three- and four-member) participated in this study in order to obtain 20 groups of four-members each.

Measures

Nuclear Attitudes Questionnaire (NAQ). Newcomb (1986) constructed this questionnaire to assess individuals' attitudes, beliefs, and emotional reactions towards a variety of concerns related to nuclear weapons, nuclear war, and nuclear power plants. It is comprised of 15 items, with each item accompanied by a 5-point, anchored rating-scale (-2 = strongly disagree to 2 = strongly agree); for this study, two of the items, statements numbered four and eight, were modified to refer to Canada instead of to the United States, with the intent of the original statement being retained (see Appendix A, p. 179, for both the instructions and the NAQ). Newcomb's factor analysis of these fifteen items yielded four-factors (nuclear concern, nuclear support, fear of future, and nuclear denial) which were used in this study to compare female and male responses.

Individual self-rating measure. This measure consisted of a single-item, self-rating of one's degree of overall concern about nuclear-related issues (see Appendix B, p. 184). It was developed on the basis of Jaccard, Weber, and Lundmark's (1975) finding that the reliability (test-retest) and validity (convergent and divergent) of Guilford's single item, self-rating measure of attitude were essentially equivalent to those obtained by three other multi-item attitude measurements (Likert, Thurstone, and semantic differential).

Group self-rating measure. The group self-rating measure asked that the group perform the single-item rating identical to the one just previously completed on an individual basis. Now, however, the group was asked to discuss their group's degree of overall concern about nuclear-related issues in an effort to determine a rating that best represented their group (see Appendix B, p. 184).

Group member rankings. This questionnaire was concerned with group members' perceptions of their own and other group members' participation during the group discussion. It was based on the three-item questionnaire designed by Jose

and McCarthy (1988), modelled on Bales' (1950) categories of group interactions, with the single change to their questionnaire involving the addition of a more specific question about task-directed behaviour. These questions were thought to reflect Bales' broad-based categorization of task- and socio-emotional roles: Who talked the most? Who contributed the most to getting the task done? Who was most concerned about group feelings? and Who had the best ideas? (see Appendix C, p. 187). Each group member nominated a first- and second-ranked group member for each of the four categories; first-ranked members were given a score of three, second-ranked members a score of two, and the remaining two members a score of one each (see Jose & McCarthy). Task-orientated behaviours, including talkativeness, task-directedness, and best ideas, are thought to correspond with leadership styles and, hence, with greater influence than socio-emotional behaviours, which are considered coincident with concerns about group feelings and, hence, with lesser influence.

Group interactions. During the group discussion, interactions amongst group members were recorded in terms of who was speaking to whom (see Bales, 1970, pp. 62-90; Stephan & Mishler, 1952). The unit of analysis was construed as a "complete act", defined by a single idea, and expressed in a variety of possible forms, from complete sentences to phrases to single words (e.g., "yes" or "no"). So, for example, each time a group member introduced one idea or point, an interaction was recorded to note both the speaker and the member(s) to whom the communication was directed. Only verbalized acts were recorded. Cohen's *kappa* (cited in Bakeman & Gottman, 1986) was calculated to determine the reliability of inter-judge agreement, corrected for chance, between the experimenter's recordings and a second trained, male judge who listened to audio-taped discussions for five group discussions (one from each type of group composition for a test sample size of

25%). A reliability coefficient ($k = P_{\text{obs}} - P_{\text{chance}} / 1 - P_{\text{chance}}$) of .96 was obtained, suggesting high agreement between the two judges on speaker transitions.⁴

Procedure

Students were welcomed to the study by the same female experimenter, who then asked them to seat themselves on the chairs around a table. The experimenter introduced the study by telling subjects that they would be participating in a study about students' attitudes toward a variety of nuclear-related issues. They were further informed that the study consisted of two periods: during the first period they would be asked to complete questionnaires on their own individually, and, in the second period, they would work on a questionnaire as a group. The experimenter told them that with their permission the group period would be audio-tape-recorded. They were assured that the tapes would be used for experimental purposes only. Students were then asked to fill in a general information sheet attached to their experimental booklets, to provide their signed consent to participate, and to grant their written permission to audio-tape-record the experimental session (see Appendix D, p. 190).

In the first period of the study, they were presented with two questionnaires (*Nuclear Attitudes Questionnaire*, *Nuclear Concern Rating*) to complete on their own individually. Once everyone had completed her/his individual questionnaires, the experimenter introduced the second period. Students were asked to introduce themselves to each other by, for example, providing their name, area and/or year of study. This was followed by the presentation of the group questionnaire (*Nuclear Concern Rating*), with the instructions that they were to determine, through discussion, their group's degree of overall concern with nuclear-related issues. The experimenter told them that they would have a maximum time limit of thirty

4. Due to the physical constraints imposed by the laboratory's lacking an observation room and audio-tape recording facilities, it was not possible to obtain a reliability check on the recorded observations of the person to whom the communications had been directed.

minutes to find the rating that best represented their group's degree of overall concern, and they were encouraged to use as much time as was necessary to accomplish this. Of the allotted time, mean times for each of the five group compositions were 20 minutes for the all female groups (range of 10 to 30 minutes); 21.75 minutes for the three females-one male groups (range of 10 to 27 minutes); 10.5 minutes for the two females-two males groups (range of 7 to 15 minutes); 26.75 minutes for the one female-three males groups (range of 20 to 35 minutes); and, 10.5 minutes for the all male groups (range of 2 to 25 minutes).

At the end of the group discussion and group rating, each student was given a short questionnaire asking her or him to rank the group members, including her- or himself, on four dimensions of group interactions (Talkativeness, Task-directedness, Socio-Emotionality, Best Ideas). Students were then informed about the nature of the study and thanked for their participation.

Results

Individual Questionnaires

Nuclear attitudes questionnaire (NAQ). Separate *t*-tests were performed on each of the 15 NAQ items to compare female and male responses. Mean ratings for eight of the fifteen items were observed to differ significantly for females and males: women as compared to men rated power plants as less safe ($t(78) = -2.23, p < .05$), indicated stronger feelings of fear associated with living near nuclear power plants ($t(78) = 2.47, p < .02$), showed a more neutral position about Canada's need to have a strong nuclear force ($t(78) = 2.56, p < .02$), disagreed more with the idea of Canada supplying other countries with nuclear power plants ($t(76) = -3.20, p \leq .002$), rated themselves as more frightened when they thought of all the nuclear weapons in the world ($t(77) = 2.72, p \leq .008$), disagreed more with the assumption that people tend to overreact about the threat of nuclear war ($t(78) = -2.59, p \leq .01$), indicated that the world does feel like a very dangerous place because of so many nuclear weapons ($t(78) = 2.44, p < .02$), and suggested a stronger hesitancy about raising a child with the threat of nuclear war ($t(78) = -2.48, p < .02$). Although the seven remaining NAQ mean ratings did not reach statistical significance, the mean ratings were observed to be in the expected directions, based on Newcomb's (1986) observations, for females as compared to males. Table 1 reports the mean ratings for females and males for each of the 15 NAQ items.

NAQ four-factor comparisons. Female and male mean ratings were found to differ significantly on two of Newcomb's (1986) four factors. For the factor labelled *Nuclear Concern* (items 2, 3, 9, 13, and 14), the mean rating for females was significantly higher than that for males, $t(77) = 2.68, p \leq .005$, one-tailed. Mean ratings on the factor termed *Fear of the Future* (items 6 and 15) were also observed to differ significantly, with females indicating a stronger degree of fear than males,

Table 1
Sex Differences in Mean Ratings on NAQ Items

Items (Abbreviated)	Mean Ratings	
	Females	Males
1. Power plants are safe	-.52 [*]	.04
2. Concerned about nuclear weapons	1.57	1.26
3. Afraid near nuclear power plant	1.00 [*]	.31
4. Canada needs nuclear weapons	-.43 ^{**}	-1.04
5. Nuclear power is efficient	.32	.57
6. Nuclear war in 10 years	-.90	-1.03
7. Nuclear power and weapons linked	-.09	-.20
8. Canada supplies nuclear power	-.91 ^{**}	-.13
9. Afraid about nuclear weapons	1.12 ^{**}	.43
10. Will survive nuclear war	-1.41	-1.37
11. Never worry about nuclear war	-.68	-.39
12. People overreact re: nuclear war	-.78 ^{**}	-.08
13. Depressed about nuclear war	.16	-.16
14. World feels dangerous	.56 [*]	-.11
15. No hesitancy about children	.18 [*]	.86

t(78); * $p < .05$, ** $p < .01$

$t(77) = -1.87, p \leq .05$, one-tailed. Although they only achieved close-to-statistical significance levels by conventional standards, mean ratings for the last two factors were in the expected directions. On the factor concerned with *Nuclear Support* (items 1, 4, 5, and 8), the mean rating for females showed less support than that obtained for males, $t(76) = -1.45, p \leq .08$ (one-tailed); and, for the factor representing *Nuclear Denial* (items 7, 10, 11, and 12), females' mean rating suggested less denial than males', $t(76) = -1.43, p \leq .08$ (one-tailed). The mean ratings for each of the four factors are presented in Table 2. In sum, females' mean ratings conveyed significantly more nuclear concern and fear of the future, aspects associated with increased nuclear anxiety, whereas they did not differ significantly from males on mean ratings of nuclear denial and nuclear support, aspects observed to be related to reduced nuclear anxiety and beliefs in the need for nuclear forces and nuclear power (Newcomb, 1988). On the latter two factors, male and female means were in accordance with Newcomb's observations; that is males' means suggested more denial and more support of nuclear weapons and nuclear power.

Nuclear concern self-rating. Female versus male mean self-ratings were found to differ significantly, $t(78) = 1.75, p \leq .05$ (one-tailed), with the female mean self-rating suggesting a higher degree of overall concern than the male mean self-rating ($M = 4.31$ vs. $M = 3.72$, respectively).

Group Self-Rating

Nuclear concern rating. Group ratings were subjected to a one-way analysis of variance. No statistical difference emerged for a main effect of group composition: the mean ratings for each of the five different group compositions suggested a slight tendency to decrease with an increase in the number of male

Table 2
Sex Differences on Four NAQ Factors

NAQ Factors	Mean Ratings	
	Females	Males
1. Nuclear Concern	4.32**	1.72
2. Nuclear Support	-1.49	-.58
3. Fear of the Future	-.73*	-.17
4. Nuclear Denial	-2.93	-2.13

One-tailed $t(77)$; * $p \leq .05$, ** $p \leq .005$

group members, with the exception of the group composition of three males and one female (see Table 3).⁵

Group Interactions

Group members' rankings of group interactions. Separate analyses were performed for the mixed-sex groups and the same-sex groups given that the comparison of interest was between males' and females' perceptions of their intragroup interactions during the group discussion. For the mixed-sex groups, several different types of analyses were performed on the four-item questionnaire asking participants how they saw group members' involvement. Following the scoring procedure of Jose and McCarthy (1988), the nominations were tallied. Separate 2 (Sex) X 3 (Mixed-Sex Group Compositions) between subjects analyses of variance were then conducted on group members' scores for each of the four questions. With respect to the first question of who talked the most, a significant main effect emerged for Sex, $F(1,42) = 4.29, p < .05$ (see Table 4), with a higher mean score for males ($M = 7.79$) as compared to females ($M = 6.21$). (The two-way interaction between sex and group composition was not significant by conventional standards, $p = .11$.) Because the means for females and males across the mixed-sex groups tell their own story, they will be discussed further. Males were perceived as talking more than females whether they constituted a minority of one ($M = 9.50$ vs. $M = 6.17$, respectively) or a majority of three ($M = 7.92$ vs. $M = 4.25$, respectively). Whereas the mean talkativeness of males increased from majority to minority

5. To compare the difference between individual ratings and mean group ratings, absolute differences between individuals' scores and the respective mean group rating were calculated. No trends were observed to suggest that females shifted their individual ratings relative to the group rating more than males, and nor was there any indication of a pattern in the reverse sense.

Table 3
Group Differences on Mean Nuclear Concern Ratings

Group Composition	Overall Nuclear Concern	
	<u>Mean</u>	<u>S.D.</u>
All Female	4.60	1.34
Female Majority	4.10	.73
Balanced	3.17	1.38
Male Majority	4.80	.91
All Male	3.57	1.86

N = 20 groups

n = 4 members per group

Table 4
Summary Table for Sex X Group Composition ANOVA
on Talkativeness Scores

Source	<u>df</u>	<u>MS</u>	F
Main Effects			
Sex (A)	1	36.10	4.29*
Group Composition (B)	2	3.01	.36
A X B	2	19.28	2.29
Residual	42	8.41	

* $p < .05$

conditions, the reverse trend, a decrease from the majority to minority conditions, held for females.⁶

A main effect for *Sex* approximated conventional levels of acceptable statistical significance for the question of who seemed the most concerned about group feelings and group harmony, $F(1,42)=3.01$, $p \leq .09$, with a higher mean score for females ($M=7.51$) than for males ($M=6.49$). Looking at the means for the mixed-sex groups, it is apparent that the female mean score is higher relative to males in the groups of two females-two males (balanced) and minority female ($M=8.06$ vs. $M=5.94$, and $M=8.00$ vs. $M=6.67$, in order). For the minority male condition, male and female mean scores are relatively similar ($M=7.08$ vs. $M=6.97$). The pattern for females in minority and majority group compositions was the reverse of that described for them on question of who talked the most.

Although analyses of variance on the other two questions (task-directedness, best ideas) did not yield significant two-way interactions between *Sex* and *Group Composition* ($p = .13$), it is pertinent to note that the mixed-sex group means followed the trend discussed earlier for who talked the most. On both measures, female mean scores were lower than male mean scores in both minority and majority conditions. Means for the mixed-sex groups on the four measures of perceived group member interactions are reported in Table 5.

In order to examine further the relationship between perceived group interactions and sex, a stepwise discriminant function analysis was performed on mixed-sex groups' rankings. The four measures of perceived group interactions served as the predictor variables and sex as the variable of predicted group membership. The pooled within-groups correlations between the four measures are

6. Minority, majority, and balanced terms of reference to groups designate numerical differences only.

Table 5
Mixed-Sex Group Means on Four Measures
of Group Interactions

	Group Compositions		
	Female Majority	Balanced	Male Majority
Who talked the most?			
	<u>Mean</u>	<u>Mean</u>	<u>Mean</u>
Females	6.17	7.25	4.25
Males	9.50	6.75	7.92
Who was most task-directed?			
Females	6.67	7.75	5.50
Males	8.00	6.25	7.50
Who was most concerned about group feelings, group harmony?			
Females	6.97	8.06	8.00
Males	7.08	5.94	6.67
Who had the best ideas?			
Females	6.75	7.56	5.25
Males	7.75	6.44	7.58

Note. $n = 12, 8,$ and 4 for females across group compositions; the order is reversed for males.

presented in Table 6; as shown, the two measures of talkativeness and socio-emotional functions were but minimally correlated; all other correlations show a moderate degree of interrelatedness.

Talkativeness met the selection criteria (smallest Wilk's lambda, and correspondingly largest *F*-to-enter) to be entered first into the equation, achieving acceptable statistical significance, $F(1,46) = 3.48, p \leq .06$. At step two, the measure of perceived socio-emotional behaviour was entered, reaching statistical significance, $F(2,45) = 4.55, p \leq .015$. No other predictor variables were entered. A statistically significant canonical discriminant function equation thus emerged for talkativeness and socio-emotional functions in the prediction of female or male group membership⁷, $\chi^2(2) = 8.28, p \leq .015$. Table 7 displays the percent of groups that were classified correctly on the basis of the discriminant function equation, and, as this table reflects, the percent of correct classifications of female membership was slightly higher than that obtained for males, suggesting the possibility that group members might have perceived female interactions more specifically (e.g., low talkativeness, high socio-emotionality) than male ones (e.g., high talkativeness, medium-levels of socio-emotionality).

In order to look at group members who received first-rank nominations on the four measures of perceived group interactions, a female bias⁸, male bias, or no bias score was determined via a simple probability expression. That is, a total of the

7. The unstandardized canonical function coefficients are as follows: .307 for talkativeness; -.388 for socio-emotional, with a constant of .561. The classification function coefficients (Fisher's linear discriminant functions) for females are: .353 (talkativeness), 1.42 (socio-emotional), with a constant of -.7.117; and, for males, .624 (talkativeness), 1.08 (socio-emotional), with a constant of -.6.623.

8. Bias, in this case, refers to a statistical property as opposed to a response tendency.

Table 6
Correlations Amongst Four Measures of
Group Interactions

	Talk	Task	Socio- emotional	Ideas
Talk	1.00			
Task	.60	1.00		
Socio-emotional	.35	.67	1.00	
Ideas	.67	.60	.55	1.00

Table 7
Predicted Group Membership on the Basis of
Talkativeness and Socio-Emotional Actions

Actual Group	<u>N</u>	Predicted Group Membership	
		Females	Males
Females	24	17 70.8%	7 29.2%
Males	24	9 37.5%	15 62.5%

Note. Percent of grouped cases classified correctly: 66.6%

number of times a female or male was nominated as first in rank was compared to the total number of nominations expected by chance; if the obtained nominations exceeded the chance-level of expected nominations, a female or male bias was scored. For example, in three-female, one-male groups, the expected number of nominations for females was 12 out of 16 as compared to 4 out of 16 for males.⁹ If, say, the total obtained female nominations exceeded the expected number of 12, one female bias was scored. The bias scores were determined in this way for mixed-sex groups only, and, as revealed by the tabulations of female or male biases in Table 8, the largest discrepancies between first-ranked males and females occur in the categories of perceived talkativeness and socio-emotional actions.

Same-sex groups. First-rank nominations in same-sex groups were examined to determine whether they were distributed differentially for all female as compared to all male groups. The results of this frequency count of the number of first-ranked speakers per question per group revealed a rather similar pattern for both female and male same-sex groups (see Table 9).

Observed Group Interactions. In order to see who initiated and who concluded group discussions most often, counts were made of the number of times these activities were performed by females or by males; males were the first to speak six out of eight times (75%), and they had the last word seven out of eight times (87.5%); for balanced female-male groups, females had the first and last word three out of four times (75%). To examine whether the group compositions differed in the amount of communication acts they produced, a one-way analysis of variance

9. For those cases where a participant indicated that all group members were equal in rank, the case was omitted and the probabilities were adjusted accordingly ($n = 1$ for the question of socio-emotional behaviours; $n = 1$ for the question of best ideas, with both instances occurring in one of the balanced groups).

Table 8
Female, Male, or No Bias on Four Measures of
Mixed-Sex Group Interactions

	Female Bias	Male Bias	No Bias
Group Composition			
Who talked the most?			
Female Majority	1	3	0
Balanced	2	2	0
Male Majority	0	4	0
Total	3	9	0
Who was the most task-directed?			
Female Majority	2	2	0
Balanced	2	1	1
Male Majority	0	3	1
Total	4	6	2
Who was most concerned about group feelings, group harmony?			
Female Majority	2	1	1
Balanced	4	0	0
Male Majority	0	0	4
Total	6	1	5
Who had the best ideas?			
Female Majority	1	2	1
Balanced	2	0	2
Male Majority	0	3	1
Total	3	5	4

Table 9
Number of First-Ranked Speakers in
Same-Sex Groups

Number of speakers per question per group	
Who talked the most?	
All Female	5
All Male	7
Who was most task-directed?	
All Female	10
All Male	10
Who was most concerned about group feelings, group harmony?	
All Female	9
All Male	11
Who had the best ideas?	
All Female	10
All Male	10

was performed on the total number of communication acts initiated by members within groups, yielding a significant between-groups effect, $F(4,75)=20.51$, $p<.001$ (see Table 10). Newman-Keuls post hoc comparisons indicated a significant mean difference between minority-male and minority-female group compositions ($M=117.75$ vs. $M=167.75$); means for these two group compositions also differed significantly from the means for the all female groups ($M=77.00$), balanced female-male groups ($M=56.75$), and all male groups ($M=56.75$). The remaining analyses of observed group interactions were conducted separately for mixed-sex groups and same-sex groups because the models for the two data sets were different; mixed-sex groups allow for a comparison of female and male intragroup interactions across varying group compositions whereas same-sex groups allow for an intergroup comparison only.

Mixed-sex ratios. To assess whether females and males differed in the number of communication acts they initiated, individual scores of observed frequency were expressed as a proportion of the total number of communications for the group in which they participated. Proportion scores were then analyzed via a 2 (Sex) X 3 (Mixed-Sex Group Composition) between subjects ANOVA. Although no significant effects were obtained from this analysis, the mean proportion scores are mentioned here because their pattern dovetails with the findings observed for rankings of perceived talkativeness: males' mean proportion score was slightly higher than that for females ($M=26.58$ vs. $M=23.46$, respectively); mean proportion scores for males in both the minority and majority group compositions exceeded that of females in both situations ($M=33.25$ vs. $M=22.25$, for minority-male, majority female; and, $M=25.83$ vs. $M=22.50$, for minority-female, majority-male); male and female mean proportion scores in the balanced group compositions indicated a marginal lower mean for males ($M=24.38$ vs. $M=25.75$, respectively).

Table 10
ANOVA Summary Table for Five Group Compositions on
Total Communications Initiated by the Group

Source	<u>df</u>	<u>MS</u>	F
Between Groups	4	36240.20	20.51 *
Within Groups	75	1766.56	

* $p < .001$

While male mean proportion scores decreased noticeably from minority to majority conditions, female mean scores were relatively constant.¹⁰

Communication acts were analyzed further according to Bales' (1970) two-category subdivision: communications directed toward groups and communications directed toward individuals, with the former category supposedly suggesting "assertions of dominance" (Bales, p. 67).¹¹ Again, the number of communication acts was expressed as a proportion of the total communication acts in each category, and these proportion scores were then subjected to separate two-way, between subjects analyses of variance (Sex X Mixed-Sex Group Compositions). No significant main effects emerged for proportion scores of communications directed toward groups: statistical significance of a two-way interaction between sex and group composition fell outside of conventional levels of acceptance ($p = .18$). The means are of sufficient interest, however, to be presented for the patterns they suggest: male mean scores decreased from minority to majority conditions ($M = 35.00$ vs. 28.67) whereas female scores increased from minority to majority situations ($M = 14.25$ vs. 21.67), with male means exceeding female means in both minority male and majority male group compositions ($M = 35.00$ vs. $M = 21.67$, and $M = 28.67$ vs. $M = 14.25$, respectively); female mean scores were higher than male mean scores in balanced groups ($M = 28.5$ vs. $M = 21.50$).

With respect to proportion of communication acts directed toward individuals, the analysis of variance did not result in any significant effects. What deserves mention, however, is how the mean proportion scores decreased from minority to balanced to majority conditions for both females and males ($M = 26.50$,

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10. A 2 (Sex) X 2 (Minority male/Minority female) between subjects ANOVA on mean proportion scores was not significant ($p < .18$) for the main effect of Sex.
11. Some caution should be exercised in the interpretation of these results given the lack of a reliability check on who were the recipients of communications. The high inter-judge reliability obtained for identification of initiators suggests some credibility for the nominations of groups or individuals as the recipients.

24.25, 22.83 for females, and $M = 31.00, 27.25, 24.50$ for males, in order), with lower female as compared to male mean scores in each situation excepting minority female groups.

Proportion scores for the number of communication acts received by group members relative to a group's total number of communication acts were analyzed by a 2 (Sex) X 3 (Mixed-Sex Groups) between subjects ANOVA. A marginal level of statistical significance emerged for the two-way interaction between sex and group composition, $F(2,42) = 2.76, p = .07$ (see Table 11). Looking at the minority-majority group compositions, females received a lower mean proportion of communications than males whether they constituted a minority of one or a majority of three ($M = 11.50$ vs. 17.42 , and $M = 14.08$ vs. 19.75 , respectively). Balanced compositions of females and males revealed a higher mean score for females ($M = 16.88$) as compared to males ($M = 9.25$).¹²

Same-sex groups. No significant differences emerged for comparisons between female and male groups on the proportion of communication acts initiated ($M_f = 24.94$ vs. $M_m = 24.00$; $t(30) = .14$, n.s.), the proportion of communications directed towards the group ($M_f = 24.94$ vs. $M_m = 18.81$; $t(30) = 1.07$, n.s.), the proportion of communications directed towards individuals ($M_f = 22.56$ vs. $M_m = 18.69$; $t(30) = .73$, n.s.), or proportion of communications received ($M_f = 11.50$ vs. $M_m = 8.94$; $t(30) = .81$, n.s.).

12. Mann Whitney U tests were performed on proportion initiated, proportion initiated to group and to individuals, and proportion received to assess whether the rank orders differed for females as compared to males. No significant statistical results emerged.

Table 11
Summary Table for Sex X Group Composition ANOVA on Mean Proportion of
Received Communications

Source	<u>df</u>	<u>MS</u>	<u>F</u>
Main Effects			
Sex (A)	1	1.81	.02
Group Composition (B)	2	37.80	.48
A X B	2	216.06	2.76*
Residual	42	78.29	

* $p \leq .07$

Summary and Discussion

The results of this study support previous research findings on differences between females and males on attitudinal measures of nuclear-related issues (e.g., Newcomb, 1986; Silverman & Kumka, 1987); they also lend a degree of support to social psychological measures of small group dynamics involving differing compositions of females and males. Whereas Newcomb obtained reliable sex differences on twelve of the fifteen items contained in his *Nuclear Attitudes Questionnaire* (NAQ), females and males were observed, in this study, to differ significantly on eight NAQ items. Despite the fewer obtained sex differences, female and male mean ratings parallel the direction of those reported by Newcomb. In general, females' ratings suggested a stronger reluctance to endorse the use of nuclear power, conveyed a stronger sense of fear about the presence of nuclear power plants and nuclear weapons, and imparted a weaker feeling of security, noted by their ratings of the world as a dangerous place, hesitancy about raising children, as well as worries about nuclear war and related feelings of depression.

This pattern of sex differences was borne out by the comparisons between females and males both on Newcomb's four-factor derivation from the NAQ and on the single-item self-rating of overall concern about nuclear-related issues. Comparisons between females and males on the four factors corroborated Newcomb's findings. As in Newcomb's study, both females and males indicated a concern over nuclear issues, with females showing a stronger concern than males. On the factor termed *Nuclear Support*, neither sex was supportive, with females indicating less support than males. With respect to *Fear of the Future*, males conveyed less fear than females; and, on the fourth factor, females showed less denial about nuclear-related concerns than males. Results on the single-item self-rating of overall nuclear concern were consistent with NAQ results; females rated themselves as more concerned than males about nuclear issues in general.

Taken together, the attitudinal measures reflect a stronger tendency on the part of females towards a more pacific or less militaristic position as compared to males. This does not mean that only females' attitudes reflect a pacific position, but rather that females show a stronger degree of pacifism than males. In this sense, the results lend support to the predicted differences between females and males.

It is difficult to interpret the differences between the five different group compositions on the group rating of overall concern about nuclear issues. The stated hypothesis was that group ratings of overall concern would increase as a function of the number of females in the groups, and that this relation would be conditional on all things being equal. This hypothesis was not upheld by the results. While there was a slight decrease in mean group ratings as the number of female group members decreased, the minority-female, majority-male group composition produced a mean group rating that exceeded all other groups. There is no ready explanation for this finding, because it may reflect social psychological dynamics between females and males that were not taken into account, the variety of methods used by group members to determine their group rating, the variety of issues discussed (some emphasizing nuclear power, others nuclear weapons) or simply the attitude scale itself. One possible interpretation of this result lies in the greater representation of active past involvements with peace groups (e.g., the Litton demonstration, peace concerts) amongst group members comprising the minority-female, majority male group composition as compared to other group compositions. Although this may offer a reasonable explanation of the heightened concern shown by this group composition, a definitive interpretation of the general finding on group mean ratings will for now remain elusive.

A second purpose of this study was to obtain baseline measures for the manipulations introduced in Study II, serving much the same use as experimental control groups. No hypotheses were thus specified about either perceived or

observed group interactions. In general, the results lend support to previous research demonstrating females' tendency to specialize in socio-emotional interactions and males in instrumental activities in situations of mixed-sex group compositions (e.g., Aries, 1976, 1982), and to a relationship between male-associated instrumental activities and correlates of leadership and influence (e.g., Bales, 1970; Bavelas, Hastorf, Gross, & Kite, 1965). Talkativeness and socio-emotional activities were found to discriminate female and male interactions for mixed-sex groups, in three different types of analyses, and a fairly strong positive correlation was noted between talkativeness and best ideas in contrast to the weaker correlation with socio-emotional activities.

Although Jose and McCarthy (1988) related such measures of perceived interaction to masculine, feminine, or androgynous sex-roles, it is interesting to note that while they observed that high masculinity scores predicted talkativeness and best ideas, sex (female) and femininity scores predicted socio-emotional ratings. Aries (1982) also observed a similar effect of task specialization for females and males whose participation rates were equal; further, in an earlier study, Aries (1976) noted that males seemed to benefit more than females in mixed-sex groups as measured by greater variation in interpersonal style for males and a more restricted one for females. While a comparable interpretation of female and male interaction styles in mixed-sex groups is unwarranted given the absence of directly relevant statistical results, this possibility was suggested by the lower prediction rate of male as compared to female group membership on the basis of talkativeness and socio-emotional scores.

Amount of participation, quality of ideas, and task-directedness have been observed to be associated with leadership or the exercise of power, and with being influential (e.g., Bavelas, Hastorf, Gross, & Kite, 1965; Carter, 1954; Aries, 1987). Bales (1970) maintains that both the amount of initiated communications and the

number directed towards the group index the amount of power a group member attempts to exercise. Overall, males were observed to initiate little more communication than females, with their higher mean not differing significantly from females. Although the noticeable difference in their mean participation rates for male minority or male majority groups is mentionable, conclusive comments are precluded by the lack of definitive statistical differences between females and males in mixed-sex group compositions. In both female minority and female majority groups, females received fewer communications than males, which, when linked to the higher frequencies of communications initiated by males in those group compositions, suggests that males were exerting more influence than females (Bales, 1970). No differences were observed for same-sex groups.

As Aries (1987) points out, it is often difficult to draw comparisons across studies because of the differences in method, size of groups, tasks, temporal length of interaction, measures of group member interactions, and we can add to this the different ratios of females to males in mixed-sex group compositions. Admittedly, this experiment involved only one-session of a short duration thus limiting the opportunity for roles and interaction styles to stabilize, as both Bales' and Aries have done in their own research. What this means for the interpretation of results in this study is that group members' perceptions of each other may simply reflect stereotypical notions of female and male behaviour.

Regardless of the diversity in methods, however, Aries also notes a fairly consistent trend of males' interactions typifying direction and dominance and females' interactions representing socio-emotional expressions. Both the perceived and, to a lesser extent, the observed measures of interaction styles, in this study, lend some support to this general pattern. That is, males were perceived by others to be most talkative and females most socio-emotionally directed. Although inconclusive, the means for mixed-sex group compositions in this study, also suggest that group

interactions may vary depending on the ratio of females to males (see, for example, Kanter, 1977; Ott, 1989).

In summary, the results from this first study point to a greater concern on the part of females as compared to males on nuclear related issues, and they also lend a degree of support to traditional interaction styles observed between males and females in mixed-sex group interactions, especially for how group members perceived each others' contributions to the group discussion and group task. The extent to which social influence attempts, by females or males, affected group ratings of nuclear concern was unclear; group ratings were not observed to decrease from all female through to all male groups, as had been predicted. The main distinction drawn between their interaction styles lies in the assignment of instrumental and socio-emotional activities, suggesting a greater degree of perceived influence for males than for females by both female and male group members. While offering weak support, the observed group interactions also suggest that males, in mixed-sex group compositions, exerted more influence as compared to females. Socio-emotional and instrumental distinctions of female and male interaction styles obtained in this study thus lend a degree of validity to the two instructional sets (informational versus relational) introduced in the second study in an effort to alter social influence processes.

Experiment 2

Method

Subjects

One hundred sixty Carleton University male ($N=80$) and female ($N=80$) undergraduate students were recruited to participate in a two-hour experiment on attitudes towards issues of peace and security. Students were contacted by telephone to schedule a time for them to participate in one of five different group compositions, with the conditions that group members were previously unacquainted and that they had not participated in Experiment 1. All students received two hours of experimental credits towards their Introductory Psychology course in exchange for their participation.

The students' ages ranged from 17 to 60 years of age, with an average age of 21 years. Sixteen (10.1 per cent) of the students stated that they had previously belonged to an organization concerned with peace: seven (4.4 per cent) of the students indicated that they were currently involved with a peace organization. No differences in participation rates were observed between males and females or between groups. As in Experiment 1, broad interpretations of organizations concerned with peace were given, including, for example, peace walks, Amnesty International, Green Peace, the militia, and the police force.

Group compositions. Subjects were assigned unsystematically to one of five different types of four-member groups, as described in Experiment 1. Each group was assigned randomly to one of two psychological sets, *informational* versus *relational*¹³, manipulated by instructions. A total of 84 groups were organized in

13. The underlying ideas of types of social influence and different psychological orientations to the group have been retained, with this study departing from their use in the classic *group pressure* studies in the omission of confederates or fictitious group norms to try to influence individuals' positions. In one sense, the *informational* set places the demands on all group members to

order to obtain 40 groups of four members each: twenty-two of the scheduled groups resulted in only three members arriving to participate, five groups had received an ineffective, initial version of the relational set instructions (see Instructional sets, p. 71), two groups were excluded because of disruptions during the experiment, one group had inadvertently included two group members who were involved in a personal relationship, four groups were lost due to either equipment malfunctions or a power failure, four groups reached a stalemate, and five groups were unable to work out their group reasons.

Measures On Issues of Peace and Security

The *Nuclear Attitudes Questionnaire* (NAQ) and the self-rating of overall concern about nuclear-related issues were the same as those used in Experiment 1.

Nuclear arms dilemma: written reasons. Individual and group reasons were content analysed first according to the general topic area and second to their use of either a care or justice perspective, with those reasons not reflecting either recorded as "other". After a first reading, over twenty specific categories had been identified from reasons written in support of *Disarmament* (Position One) and over twenty for *Armament* (Position Two).¹⁴ The categories were then sorted by general themes, resulting in a reduction to four categories for *Disarmament* (Emotional/Physical Welfare, International Relations, Social-Environmental Welfare, Pacific Beliefs and Actions) and five categories for *Armament* (Fear/Distrust, Dominion/Power, Arms

behave in a more instrumental (masculine) style in contrast to the *relational* set that asks group members to behave in a more expressive style (feminine). It is acknowledged that the two psychological sets will not function independently of each other, but rather that the instructions will serve to emphasize one approach to the group over the other. This can be thought of in terms of the figure-ground relationship, wherein an informational set serves as the figure against a ground of relations in the group as compared to a relational set in which the relations among group members becomes the figure against a background of information.

14. The terms *Disarmament* and *Armament* will be used hereafter to refer to the two positions posed in the *Nuclear Arms Dilemma*, stated as the U.S. should disarm drastically its arsenal of nuclear weapons as the best possible means towards peace (Position One) versus the U.S. should maintain and/or increase its arsenal of nuclear weapons as the best possible means towards peace (Position Two).

Control/War Prevention, Arms Superiority/ War Prevention, Socio-Economic). A second reading followed to code reasons according to the sets of categories and to classify their reasons according to care or justice perspectives, with unidentifiable ones coded as other. (See Appendix E, p. 194, for coding guidelines, adapted from Gilligan et al. (1987b), and examples.) The coding of care and justice perspectives departs from Gilligan's use in that the concern here is not with identifying individuals as care or justice reasoners in their moral orientations, but rather with the perspectives detected in the reasons they offer.

A second male judge was trained to use Gilligan's coding guidelines for identification of care or justice perspectives as well as the categories designed for the written reasons. Interjudge reliabilities, determined by way of Holsti's (1969) reliability coefficient, for a sample of 108 students' reasons written in support of *Disarmament* was .90 for categories and .80 for identifications of care, justice, or other, perspectives; given the main interest in care and justice distinctions, interjudge reliabilities were calculated for these two perspectives only, omitting those classifications deemed "other", resulting in an increase in the reliability coefficient to .97. For *Armament*, the interjudge reliabilities were .93 for categories and .95 for care, justice, or other perspectives, for a sample of 67 sets (individual and group) written reasons. (Due to the virtual absence of a care perspective, a reliability coefficient for the main distinctions of interest was not calculated.)

Measures of Social Influence

Group member rankings. As in the first experiment, participants were asked to complete the four-item questionnaire concerned with their perceptions of themselves and others during the group discussion.

Group interactions. The audio-tape recordings of group discussions were transcribed by two people (one female, one male) who were uninformed about the nature of the experiment. The transcribers worked jointly to proof the written

reproduction against the recordings. Using Cohen's *kappa*, interjudge reliabilities between the transcribers and the experimenter on five of the audio-tape recorded discussions were .78, .88, .88, .89, and .95.

Each transcript was then coded, by the experimenter, into types of interactions according to Bales' (1950/1970) interaction recording scheme, involving twelve categories that can be collapsed into a four-fold framework (Positive Social-Emotional, Attempted Answers, Attempted Questions, Negative Social-Emotional). An expression of a single idea delimited a unit of interaction, and could thus range from complete sentences to phrases to single words (e.g., "yes" or "no"). The four broad-based categories were of interest to this experiment, with task-directed interactions, represented by the category of attempted answers, considered indicative of influence attempts; socio-emotional and attempted questions were considered to be reflective of interactions directed towards helping the group to get along (group harmony) and, therefore, were considered less related to influence attempts. Interjudge reliabilities on the four categories of group interactions, for a sample of ten groups (two of each type of group composition), were .95 for positive socio-emotional interactions, .97 for attempted answers, .95 for attempted questions, and .78 for negative socio-emotional interactions.

Individuals' frequency scores on the categories were expressed proportionately in two ways: one score was derived by using the frequencies of each category relative to an individual's total number of communication acts and the other by using category frequencies relative to a group's total. The first calculation parses an individual's interactions into types showing which categories were predominantly used by an individual; the second one divides an individual's interactions into types relative to other group members, and, so represents the relative stress on types of interaction an individual contributed to the group total.

Self-influence and other-influence ratings. After the group discussion, participants were asked to rate how much influence they thought each group member, including themselves, had over the group's decision on a scale ranging from 1 (No influence at all) to 7 (Great deal of influence; See Appendix F, p. 203).

Procedure

Instructional sets. A pilot test of the two instructional sets was conducted to determine whether the intended emphasis in the instructions, informational or relational, was interpreted as such. Separate groups of students ($N=58$) listened to an audio-taped recording of either a male or female presenting either the informational or relational set instructions, after which they were asked to complete a questionnaire consisting of ten paired-comparison statements about the meaning of the instructions (see Appendix G, p. 206). A 2 (Informational vs. Relational Set) X 2 (Sex of Instructor) X 2 (Sex of Listener) between subjects ANOVA yielded a significant main effect for *Instructional Set*, $F(1,50)=8.80$, $p=.005$, suggesting that the two sets were not interpreted as equally strongly in their emphasis; the mean for the *Informational Set* ($M=7.00$) exceeding that for the *Relational Set* ($M=5.17$). Instructions for the *Relational Set* were re-written and re-tested, using only a female audio-tape recorded instructor: once again, they proved unsatisfactory ($M=4.2$ for an N of 15 listeners). Given the rather weak interpretations of the *Relational Set*, Shipley and Veroff's (1952) procedures for arousing *n Affiliation* were adopted, introduced by a set of instructions stressing the importance of considering how harmonious their group can be, and followed by Shipley and Veroff's list of adjectives. Each group member first rank-ordered the adjectives, and then read his or her order to the group. While a group member was reading his or her rank-order of the adjectives, each of the remaining group members checked off two adjectives

that best described this person.¹⁵ After this was completed, the *Relational Set* instructions for the group were heard (see Appendix H, p. 210, for both instructional sets). A check on the instructional sets was undertaken by having six groups, three from each set, complete the paired-comparison questionnaire at the end of their experimental participation. Results of a t-test revealed no significant differences, $t(22) = 1.39, n.s.$, suggesting that the two sets were interpreted equally well, as measured by the questionnaire.

Overview. Subjects were greeted by a female experimenter, who then asked them to seat themselves on the four chairs placed around a table. The experimenter introduced the study by telling subjects that they would be participating in a study concerned with students' attitudes toward issues of peace and security. They were further informed that the study consisted of two periods: during the first period they would be asked to complete two questionnaires on their own individually; and, in the second part they would be asked to work on one questionnaire as a group. The experimenter told them that with their permission the group period would be audio-tape-recorded, and gave them her assurance that the tapes would be used for experimental purposes only. Students were then asked to fill in a general information sheet attached to their experimental booklets, to provide their signed consent to participate, and to grant their written permission to audio-tape-record the group session (see Appendix D, p. 190). They were informed that the instructions for the remainder of this study would be presented via an audio-tape recording, and that they were also available to them in their experimental booklets. Lastly, students were asked to print their names on a name tag, and to introduce themselves to each other by giving, for example, their names and area of study.

15. Although observations of the groups during the *n Affiliation* arousal manipulation were not recorded systematically, casual observations of group members' frequent signs of nervousness, such as giggling, increased fidgetiness, and blushed faces, are remarkable.

As in the first experiment, subjects were asked first to complete the NAQ and then to perform the individual self-rating of nuclear concern (see Appendices A and B, pp. 179, 184, respectively). Both of these measures were included to provide a preliminary assessment of differences between females and males on nuclear-related issues. A total of twenty minutes was allotted for subjects to complete both of these questionnaires.

After both the NAQ and the self-rating were finished, subjects heard the instructions for the second period, which involved both individual and group tasks. Subjects were informed that we were asking groups of students to discuss the issue of nuclear disarmament versus nuclear armament as a means to peace. They were further asked to imagine that their group was acting as a Canadian student advisory committee to groups of American students, at Stanford University, who had invited them to participate in a forum addressing the United States' involvement in the arms race as a means to peace (see Appendix I, p. 218). These instructions were written to encourage students to become involved in the study by setting a relevant context for both their participation and group discussion.

Two positions on the nuclear arms issue were identified for subjects in the instructions (The U.S. should drastically reduce its arsenal of nuclear weapons as the best possible means towards peace vs. The U.S. should maintain or increase its arsenal of nuclear weapons as the best possible means towards peace), together with the information that they would be expected to try to adopt one of the two positions and to provide three reasons of support. Both of these tasks were undertaken initially on an individual basis, with subjects being told that this opportunity would help them to clarify their own thinking on the issue. Subjects were then asked to read the *Nuclear Arms Dilemma*¹⁶, a one-page summary outlining both sides of the

16. A number of sources were consulted to develop the *Nuclear Arms Dilemma*, with the intent of setting up a dilemma that would leave open the possibility of individual's use of different moral orientations in their reasoning. The idea of setting up the contrasting perspectives on the issue came about, in part, from Bobbitt's (1987) questions raised to explore the moral justification of

arms debate that was composed to make the dilemma in the debate clear; that is, neither alternative, *Disarmament nor Armament*, presented a ready and satisfactory solution (see Appendix I, p. 218). The potential influence of the order of the arguments in the dilemma was counterbalanced by the use of two forms, differing only in the order of the arguments, assigned randomly to groups. A maximum time limit of thirty minutes was allowed for subjects to listen to and to read the dilemma, to adopt their own position, and to write down their own reasons. Following this individual exercise, subjects heard the instructions for the group task.

It was here along with the instructions for the group task that the group psychological set instructions were given. Half of the groups in each of the five group configurations received the "informational" set and the remaining half were given the "relational" set. Both instructional sets encouraged group members to discuss the issue, and asked that each group try to adopt a group position and to write down the group's reasons in support. Each group was allowed a maximum of forty-five minutes to adopt their position and to write their supportive reasons. Participants were generally involved with the problem posed by the *Nuclear Arms Dilemma*, and comments made by them during their discussions proffer support for the realism of this experimental task and the seriousness with which its resolution was met. With respect to the assumption of a group position, group members often seemed concerned with forming an integral group position and set of group reasons: for example, when one group member stated that he would go along with the group "for the purpose of this experiment", another group member said "Well don't just, I mean, you can't give in", to which the former member replied "I don't think I am",

nuclear deterrence: "...does the strategy succeed in reducing the likelihood of war and the lethality of war if it comes?"; and, "...is it *just* to hold innocent millions hostage as a necessary element in a politico-military strategy if we hold, as a first principle, that some human beings may not be used as a means by others?" (p. 109). The content of the dilemma was further elaborated by considering the paradoxes of deterrence as discussed by Werner (1987), and by reviewing examples of war-type moral dilemmas by Fletcher (1966), Rachels (1979), and Grassman (1981).

and when later questioned on whether he seriously believed in the group position, he stated "Sure...I do....In a sense, in a sense of what is reality, I will agree definitely with number two". In two different groups who were having trouble finding a group position, two group members, in one instance, disagreed with taking the group majority, saying "No, no....it's a group idea, it's a group position"; or, as stated in the second instance, "No. See that's what we got to get away from this majority rules." From yet another group, one member summed up her experience as follows: "Imagine four and disparate people coming in, never met and have absolutely nothing in common and come and sit down and thrash this all out." Examples taken from three groups illustrate participants' view of the task: "This was quite an eye opening experience for me."; "An interesting issue I've never given a whole lot of thought to it."; "This is not an easy question."; "That's why it's such a hard question....This should be a three hour questionnaire."

After the group tasks, each student was asked to rank the group members using the four-item questionnaire described in Experiment 1. Students were also asked to rate each group member, including herself or himself, on the amount of influence she or he perceived each one of them had on the group's choice of position and supportive reasons, and to rate the degree to which they agreed or disagreed with the group's position and the group's reasons (see Appendix J, p. 224, for post-experimental questionnaires). When subjects had completed the post-experimental questionnaires, they were informed about the nature of the study and thanked for their participation. Comments offered freely by participants generally imparted a certain enthusiasm about the group task, the interest that it held for them, and about how this was their first opportunity to express their own feelings and thinking on the issue with their peers.

Results

Individual Questionnaires

Nuclear attitudes questionnaire (NAQ). As in the first experiment, separate *t*-tests were conducted on each of the 15 NAQ items to compare female and male responses. Mean ratings on twelve of the fifteen items differed significantly. As compared to men's ratings, women's ratings indicated a stronger disagreement about the safety of nuclear power plants ($t(157) = -3.44, p < .01$), showed more intense feelings of fear associated with living near nuclear power plants ($t(158) = 4.51, p < .001$), suggested a more neutral position about Canada's need to have a strong nuclear force ($t(158) = 3.18, p < .01$) and about nuclear power plants offering an efficient energy source ($t(157) = -3.89, p < .001$), disagreed less about the possibility of a nuclear war in the next 10 years ($t(158) = 3.17, p < .01$), showed less support for the idea of Canada supplying other countries with nuclear power plants ($t(157) = -4.04, p < .001$), indicated a stronger sense of fright with all the nuclear weapons in the world ($t(158) = 5.02, p < .001$), suggested more frequent worries about nuclear war ($t(157) = -3.88, p < .001$), disagreed more with the assumption that people tend to overreact about the threat of nuclear war ($t(157) = -3.58, p < .01$), agreed more to feeling depressed from time to time about the possibility of nuclear war ($t(157) = 2.04, p < .05$), signified that the world does feel like a very dangerous place because of so many nuclear weapons ($t(156) = 3.62, p < .001$), and pointed to a greater degree of hesitancy about raising a child with the threat of nuclear war ($t(157) = -3.79, p < .001$). The remaining three items, while not achieving a significant statistical difference, were in the directions predicted by Newcomb's (1986) observations. Table 12 presents the mean ratings for females and males on each of the 15 NAQ items.

Table 12
Sex Differences in Mean Ratings on NAQ Items

Items (Abbreviated)	Mean Ratings	
	Females	Males
1. Power plants are safe	-.39**	.21
2. Concerned about nuclear weapons	1.31	1.21
3. Afraid near nuclear power plant	1.13***	.29
4. Canada needs nuclear weapons	-.50**	-1.02
5. Nuclear power is efficient	.14***	.68
6. Nuclear war in 10 years	-.58**	-1.02
7. Nuclear power and weapons linked	.03	-.26
8. Canada supplies nuclear power	-.87***	-.18
9. Afraid about nuclear weapons	1.24***	.34
10. Will survive nuclear war	-1.46	-1.24
11. Never worry about nuclear war	-1.01***	-.30
12. People overreact re: nuclear war	-.82**	-.19
13. Depressed about nuclear war	.22*	-.16
14. World feels dangerous	.70***	.07
15. No hesitancy about children	.17***	.87

* $p < .05$

** $p < .01$

*** $p < .001$

NAQ four-factor comparisons. As shown in Table 13, female and male mean ratings differed significantly on three of Newcomb's (1986) four factors. (The items comprising each factor were listed in the first experiment.) For the factor referred to as *Nuclear Concern*, females' mean ratings were significantly higher than males' ($t(156) = 5.08, p < .001$, one-tailed), suggesting a greater degree of concern for females as compared to males. Mean ratings for the factor labelled *Nuclear Support* also differed significantly ($t(155) = -3.22, p \leq .001$, one-tailed), with the means revealing less support on behalf of females when compared to males. In addition, female and male mean ratings differed significantly for the factor termed *Nuclear Denial* ($t(157) = -3.55, p < .001$, one-tailed), with females' mean ratings indicating less denial than males'. A comparison between females and males on *Fear of the Future* showed a higher mean for females than males, but this difference was just above conventional levels of statistical acceptance, $p \leq .09$.

Nuclear concern self-rating. Female and male mean self-ratings were observed to differ significantly ($t(158) = 2.80, p < .01$, one-tailed), with a higher degree of overall concern shown by females as compared to males ($M = 4.56$ vs. $M = 3.92$, respectively).

Summary of NAQ and self-rating. Taken together, the results from both questionnaires point to the tendency of females as compared to males to be more concerned about nuclear-related issues, and to express these concerns through less support of nuclear weapons and nuclear energy, through a stronger sense of fear associated both with their presence and with the possibility of nuclear war in the near future, as well as through a stronger personal experience of depression, worries about safety in our world for themselves and future generations. When compared on the four NAQ factors, females indicated a significantly stronger sense of *Nuclear Concern*, and somewhat higher, although not significantly, degree of *Fear of the Future*. In contrast, males' mean ratings revealed more support of nuclear weapons

Table 13
Sex Differences on Four NAQ Factors

NAQ Factors	Mean Ratings	
	Females	Males
1. Nuclear Concern	4.63 [*]	1.75
2. Nuclear Support	-1.62 [*]	-.29
3. Fear of the Future	-.42	-.15
4. Nuclear Denial	-3.28 [*]	-1.99

^{*} $p \leq .001$

and power (*Nuclear Support*), and a stronger degree of *Nuclear Denial*. Thus, according to Newcomb's (1988) conceptual framework, females' higher means are related to aspects of increased nuclear anxiety whereas males' are associated with aspects of decreased nuclear anxiety.

Nuclear Arms Dilemma

Female and male positions. To compare females' and males' choices of *Disarmament* (Position One) versus *Armament* (Position Two) in response to the *Nuclear Arms Dilemma*, a 2 X 2 chi-square analysis was undertaken. This analysis yielded a significant difference, $X^2(1)=4.81, p \leq .03$. As shown in Table 14, females chose *Disarmament* with a greater frequency (76%) than they chose *Armament* (24%), while males' choices between the two positions was less discrepant (59 vs 41 percent). Moreover, females chose *Disarmament* with a greater frequency than males chose it (76 vs. 59 per cent), and males chose *Armament* more often than females did (41 vs. 24 per cent). In an effort to test whether females' or males' choices were affected by the mere presence of different female to male ratios, chi-square analyses were conducted. No significant differences emerged in the comparison of females' choices across the different group compositions; likewise, no significant differences emerged when males' choices were compared across the different group compositions. In short, the relative frequency with which males and females chose one position over the other remained fairly constant regardless of the group composition. Moreover, no significant differences were observed between females and males within the mixed-sex group compositions or between the same-sex groups, thus suggesting that the significant sex difference was that of an overall one.

Female and male reasons for *Disarmament*. Given the qualifications or individual interpretations of *Disarmament* provided in their reasons, four categories were devised to reflect these subdivisions: uni-lateral elimination, uni-lateral

2

Table 14
Female and Male Positions on the
Nuclear Arms Dilemma

	Females		Males	
	<u>N</u>		<u>N</u>	
Disarm Drastically	61	(76%)	47	(59%)
Maintain or Increase	19	(24%)	33	(41%)

Note. N = 80 for females and for males.

reduction, multi-lateral reduction, and uni-lateral arms control (mention made of retaining sufficient arsenal to blow up the world once or for strong retaliation).¹⁷

Table 15 presents a breakdown of females' and males' qualifications of *Disarmament*; over 90 per cent of females' provisos fell into elimination and uni-lateral reduction whereas males' stipulations covered uni-lateral reduction, multi-lateral reduction, and arms control.

A total of three hundred and twenty reasons were generated by the sixty-one females and forty-seven males who adopted *Disarmament*; one hundred eighty-two given by females and one hundred thirty-eight by males. As shown in Table 16, the relative frequency of females' and males' reasons, expressed as a percentage of their respective totals, was roughly equal for each of the four categories, with the exception of pacific beliefs and actions. For both females and males, almost half of their reasons were compatible with the category termed *Emotional/Physical Welfare*, with the second most commonly used category being *International Relations*, followed by *Social/Environmental Welfare*, and, last of all, *Pacific Beliefs and Action*. With respect to the latter two categories, females' reasons reflecting these categories were almost equal.

Each reason was then further classified according to a care or justice perspective, with those reasons not clearly identifiable as either coded as "other", and expressed as a proportion of the reasons generated per category. The results of this classification, as presented in Table 17, indicate that females' reasons tended to reflect predominantly a care perspective whereas male reasons were predominantly of a justice perspective, save the *Social/Environmental Welfare* category. It is of import to note that care and justice perspectives were not peculiar to either females' or males' reasons but rather to the predominance of one perspective over the other.

17. When no qualification or alteration was made to the position, it was assumed that the individual accepted the position as presented.

Table 15
Female and Male Qualifications of
Disarmament

	Females		Males	
	<u>N</u>	%	<u>N</u>	%
Elimination	11	18	0	00
Uni-lateral Reduction	48	79	28	60
Multi-lateral Reduction	1	02	12	26
Uni-lateral Arms Control	1	02	7	15

Note. N = 61 for females;
47 for males.

Table 16
Categories for Female and Male Reasons
for Disarmament

	Females		Males	
	<i>N</i>	%	<i>N</i>	%
Emotional/Physical Welfare	83	45	68	49
International Relations	51	28	44	32
Social/Environmental Welfare	25	14	21	15
Pacific Beliefs and Actions	23	13	5	04
Total	182		138	

Note. *N* = 61 for females;
 47 for males.

Table 17
Care or Justice Perspective in Reasons for
Disarmament by Females and Males

		Perspective					
		Care		Justice		Other	
Emotional/Physical Welfare							
		N	%	N	%	N	%
Females		57	69	4	05	22	26
Males		17	25	29	43	22	32
International Relations							
Females		32	63	4	08	15	29
Males		10	23	23	52	11	25
Social/Environmental Welfare							
Females		13	52	0	00	12	48
Males		9	43	3	14	9	43
Pacific Beliefs and Actions							
Females		12	52	2	09	9	39
Males		1	20	1	20	3	60

Note. N = 61 females, with 182 reasons;
 47 males, with 138 reasons.

(This analysis of reasons precludes an attempt to identify females or males as care or justice reasoners.) It is also of interest to note that the different perspectives were not necessarily tied to one particular category; the only category suggesting such a possibility being that of social and/or environmental concerns. When the two perspectives are collapsed across categories, females' reasons showed a tendency to be developed from the care perspective and males' from the justice perspective (see Table 18 and Figure 1).

Female and male reasons for *Armament*. As with *Disarmament*, the provisions given for *Armament* (Position Two) were placed into four categories: uni-lateral maintenance of arms, multi-lateral maintenance, uni-lateral maintenance or increase, and multi-lateral maintenance or increase. Females' stipulations were almost evenly split between uni-lateral maintain and uni-lateral maintain or increase. In contrast, males' provisos encompassed all four categories, with the majority of them falling under the qualification of uni-lateral maintain or increase (see Table 19). While females and males most frequently accepted the position as given, females' provision for a position of uni-lateral maintenance was proportionately higher than that obtained for males.

Females and males wrote a total of one hundred forty-five reasons for *Armament*, with females generating fifty reasons and males ninety; five categories were developed to convey their themes (Fear/Distrust, Dominion/Power, Arms Control/War Prevention, Arms Superiority/War Prevention, Socio-Economic). As with the distribution of reasons for the first position, females' and males' reasons were proportionately almost equivalent for each of the categories (see Table 20). Although the difference between the two is relatively small, the category for *Fear and Distrust* captured the largest proportion of females' reasons followed by *Arms Control and War Prevention*, whereas the category of *Arms Control and War Prevention* contained the largest proportion of males' reasons with *Fear and Distrust*

Table 18
Females and Males Use of a Care or Justice
Perspective for Disarmament

	Care		Justice		Other	
	N	%	N	%	N	%
Females	114	63	10	05	58	32
Males	37	27	56	40	45	33

Note. N = 61 females;
47 males.

Figure 1. Females and Males Use of a Care or Justice Perspective for Disarmament

Table 19
Female and Male Qualifications of
Armament

	Females		Males	
	N	%	N	%
Uni-lateral Maintain	8	42	8	24
Multi-lateral Maintain	0	00	3	09
Uni-lateral Maintain/ Increase	11	58	21	64
Multi-lateral Maintain/ Increase	0	00	1	03

Note. N = 19 for females;
33 for males.

Table 20
Categories for Female and Male Reasons
for Armament

	Females		Males	
	<u>N</u>	%	<u>N</u>	%
Fear/Distrust	20	36	30	33
Dominion/Power	7	13	11	12
Arms Control/ War Prevention	19	35	38	42
Arms Superiority/ War Prevention	6	11	6	07
Socio-Economic	3	05	5	06
Total	55		90	

**Note. N = 19 for females;
33 for males.**

succeeding in relative frequency. Reflecting the issue of *Dominion and Power* in international relations was the next most offered theme, with *Arms Superiority and War Prevention* and *Socio-Economic* related reasons being reflected least often in their reasons.

Once again, the reasons were analyzed to determine whether they were from a care or justice perspective, or whether they were not indicative of either; frequencies were then expressed as a proportion of the reasons for a category. The most remarkable finding here was the absence of a care perspective in either female or male reasons. As reported in Table 21, the perspective most frequently apparent in their reasons was that of justice, regardless of sex or category. The only seeming exception to this general trend was for the category of *Socio-Economic* reasons wherein the predominant mode was neither care nor justice. In short, females and males were not observed to differ in the themes their reasons conveyed, and their singular use of a justice perspective points to an additional similarity between their reasons. When collapsed across categories, female and male proportions are virtually indistinguishable, with a justice perspective constituting over eighty per cent for both (see Table 22).

Summary of nuclear arms dilemma. Overall, then, females endorsed *Disarmament* significantly more often than males, and males supported *Armament* with a greater frequency than females. Provisos accompanying the choice of *Disarmament* punctuated certain qualitative differences between females and males; on the one hand, only females' qualifications mentioned the need to move towards elimination of nuclear weapons, in addition to their acceptance of an unconditional uni-lateral drastic reduction in nuclear arms by the United States more often than males. Males, on the other hand, tended to include conditions of bi-lateral or multi-lateral agreements, as well as highlighting the need for some armed protection, be that through the retention of a few nuclear weapons or a strong conventional force.

Table 21
Care or Justice Perspective in Reasons for
Armament by Females and Males

		Perspective					
		Care		Justice		Other	
Fear/Distrust							
		N	%	N	%	N	%
Females		0	00	17	85	3	15
Males		0	00	27	90	3	10
Dominion/Power							
Females		0	00	6	86	1	14
Males		0	00	11	100	0	00
Arms Control/War Prevention							
Females		0	00	15	79	4	21
Males		0	00	32	84	6	16
Arms Superiority/War Prevention							
Females		0	00	6	100	0	00
Males		0	00	3	50	3	50
Socio-Economic							
Females		0	00	1	33	2	67
Males		1	20	2	40	2	40

Note. N = 19 females, with 55 reasons;
 33 males, with 90 reasons.

Table 22
Females and Males Use of a Care or Justice
Perspective for Armament

	Care		Justice		Other	
	N	%	N	%	N	%
Females	0	00	45	82	10	18
Males	1	01	75	83	14	16

Note. N = 19 females;
33 males.

While females and males differed in the frequency with which they chose the position of *Armament*, their provisos nevertheless shared an emphasis on the United States' need to maintain or increase its nuclear weapons. As for other types of stipulations provided alongside their choice of *Armament*, females emphasized that the U. S. should uni-laterally maintain its arsenal of nuclear weapons with a greater relative frequency than males. The provisos offered by male and female supporters of *Disarmament* thus seemed to point to a qualitative distinction between them whereas this was not as readily apparent for male and female supporters of *Armament*.

In a similar fashion, female and male reasons were qualitatively distinguished for the position of *Disarmament*, but not for *Armament*. For *Disarmament*, this qualitative difference was not represented in the relative distribution of females' and males' reasons across the four categories, but rather in their differential emphasis on a care or justice perspective. Females' reasons were found to stress a care perspective whereas males' reasons placed a stronger emphasis on a justice perspective, with the only category suggesting a comparable emphasis on care being that of *Social/Environmental Welfare*. In contrast, content analysis of reasons given for *Armament* revealed not only the similarity in the relative frequency of category use but also in the noticeable disappearance of a care perspective, thereby underscoring a justice perspective by both females and males.

Group Questionnaires and Group Interactions

As mentioned previously, the demands introduced by informational and relational sets were determined to be interpreted equally well by students. In addition, the results from two discriminant function analyses, discussed below in the section concerned with students' perceptions of intragroup interactions, lend some support to the effectiveness of the manipulations; for the informational set, talkativeness did not qualify to be entered into the equation, and, for the relational

set, socio-emotionality did not meet the statistical requirements to be entered. In other words, neither talkativeness nor socio-emotionality accounted for sufficient discriminant variability between females and males when the demands of the instructional set emphasized these types of interactions.

Nuclear Arms Dilemma

It is perhaps worthwhile to comment on the noticeable drop in the sample size that occurs when responses to the *Nuclear Arms Dilemma* are analyzed at the group level. Although forty small groups comprise the sample size, it falls to twenty groups for each instructional set, with four groups per type of group composition per set. Chi-square analyses presented below have taken this into account by using Fisher's exact test when the sample size is small and Yate's corrected chi-square for sample sizes exceeding an n of 20 cases. It is also thought worthwhile to note that the trends discussed below may tend to appear rather weak, in the light of the small sample sizes, and thus may offer more in the way of suggested than definitive trends.

Group positions. In an effort to examine differences amongst the five group compositions in their choice of *Disarmament* or *Armament*, an initial chi-square analysis was performed to test overall group differences. The results of this analysis yielded a significant difference amongst the group compositions, $X^2(4) = 10.67$, $p \leq .03$; the frequencies for each position per group composition are presented in Table 23. As shown, the same-sex groups' followed the same pattern of choosing *Disarmament* more frequently than *Armament*. On the other hand, the mixed-sex groups showed an increase in choice of *Armament* with an increase in the number of males composing the four-member groups, and vice versa for *Disarmament*. The male minority and female minority group compositions thus demonstrated an opposing trend, while the balanced groups were evenly split between the two positions.

Table 23
Positions of Disarmament Versus Armament
According to Group Composition

	All Female	Female Majority	Balanced	Male Majority	All Male
Positions					
Disarm Drastically	6	8	4	2	5
Maintain or Increase	2	0	4	6	3

N = 8 per group composition.

It was initially hypothesized that, given an effective instructional set manipulation, groups under the informational set would adopt *Disarmament* more frequently than groups under the relational set. An overall comparison of positions between the two sets, collapsed across groups, did not yield a significant chi-square ($p < .33$). However, a comparison amongst group compositions within the same instructional set resulted in a significant difference amongst the groups under the relational condition, $X^2(4) = 10.91, p < .03$; the difference amongst groups under the informational set fell just above conventional levels of significance ($p = .088$). In order to present a comparison of the groups under the two instructional sets, their respective frequencies of choosing *Disarmament* or *Armament* are displayed in Table 24, revealing an identical pattern for the two group compositions of all female and female majority, after which the pattern changes slightly. Balanced group compositions were essentially mirror images between the informational and relational set; male majority and all male group compositions under the informational set showed a more frequent adoption of *Disarmament* than these same group compositions under the relational set where support for this position was rare. Apart from the all male group composition, the frequencies for the two positions under both sets produce a similar tendency of a decrease in *Disarmament* choices and an increase in *Armament* choices with an increase in male group members.

To explore the stronger support for *Armament* by groups under the relational condition, several additional analyses were undertaken. A chi-square analysis comparing females' choices under the two informational sets did not yield a significant difference whereas the same comparison for males' choices resulted in a significant difference, $X^2(1) = 6.24, p \leq .01$; males under the informational set chose *Disarmament* more often than *Armament* (29 vs. 11) while the opposite trend emerged for the relational set (18 vs. 22). When the sexes were compared under

Table 24
Positions of Disarmament Versus Armament
According to Group Compositions and
Instructional Sets

Informational Set					
Positions	All Female	Female Majority	Balanced	Male Majority	All Male
Disarm Drastically	3	4	1	2	4
Maintain or Increase	1	0	3	2	0
Relational Set					
Disarm Drastically	3	4	3	0	1
Maintain or Increase	1	0	1	4	3

N = 4 groups per composition per set.

each of the instructional sets, females and males were not found to differ significantly in the informational condition, but they did differ significantly for the relational condition, with females' support of *Disarmament* being the most frequent choice (32 vs. 8) as compared to males' more frequent endorsement of *Armament* (22 vs. 18).¹⁸ This suggests that the stronger support of *Armament* found for groups under the relational condition was related to males' support of this position; it is also possible that the greater support of *Disarmament* was related to males' choices under the informational condition, although this effect may also be the result of the combined male and female strength for *Disarmament*.

In order to see whether females shifted away from their individual position more frequently than males in the adoption of a group position, they were compared across group compositions, controlling for set and group position. No significant differences emerged from these analyses, and, furthermore, no overall significant difference was found between females and males. However, when females' and males' shifts from individual to group positions were analyzed separately, controlling for set, a significant difference was obtained for females across group compositions under the relational set, $X^2(3) = 7.86, p < .05$. In short, the relative frequency of shifts away from individual to group positions differed amongst the group compositions only for females under the relational set: all female groups showed the highest frequency for no shifts as compared to shifts (14 vs. 2), followed by the female majority composition (9 vs. 3); balanced group compositions revealed an even split (4 vs. 4), whereas female minority groups indicated the lowest frequency of no shifts (1 vs. 3), or the highest relative frequency of shifts.

18. A more detailed examination of this data involving a comparison between sets for females' and males' choices within each group composition for *Disarmament* and *Armament* was complicated by the varying ratios of the positions chosen. While some effort was directed towards this, an interpretable analysis was precluded by the inconsistent ratios between the two positions.

To look at the direction of the shifts (i.e., from *Disarmament* to *Armament*, or vice versa), several analyses were undertaken to compare females and males between sets and group composition. An overall comparison of the direction of female and male shifts was not significant, and nor was it significant when females and males were compared across group compositions, controlling for instructional set. Significant differences amongst group compositions were observed, however, when the sexes were analyzed separately, controlling for instructional sets, but the pattern is inconsistent and the number per cell rather too small to draw any valid inferences about the direction of females or males shifts.¹⁹

Group reasons for *Disarmament*. Qualifications offered by groups in their reasons were subdivided into four categories: elimination, uni-lateral reduction, multi-lateral reduction, and arms control (mention of control over weapons in other weapons or maintaining technology). Table 25 presents the frequencies for the five group compositions under the informational set, and although the tallies are low per group, a trend away from elimination towards arms control as the number of male group members increase is distinguishable. A similar trend can be noted in Table 26 for groups under the relational set.

A total of forty reasons were generated by informational set groups and thirty reasons by relational set ones. Classification of group reasons according to the four

19. Under both the informational and the relational conditions, the direction of males' shifts differed significantly amongst the group compositions, $X^2(3) = 7.77, p < .05$ and $X^2(3) = 9.74, p \leq .02$, respectively. For the informational set, male minority groups consisted of one shift to *Disarmament* as compared to no shifts to *Armament* (1 vs. 0); balanced groups indicated two shifts to *Armament* only (0 vs. 2); male majority groups revealed a lower relative frequency of shifts to *Disarmament* as compared to *Armament* (1 vs. 4); all male groups had three shifts to *Disarmament* (3 vs. 0). In contrast, males participating in groups under the relational set have the following frequencies of shifts to *Disarmament* compared to position two: male minority, three shifts to *Disarmament* (3 vs. 0); balanced groups, two to one (2 vs. 1); majority male, five to *Armament* (0 vs. 5); all male, one to four (1 vs. 4). Under the relational condition, females' direction of shift was also observed to differ significantly ($X^2(3) = 7.89, p < .05$), involving two shifts to position two for all female groups (0 vs. 2), three to *Disarmament* for female majority groups (3 vs. 0) an even split for balanced groups (2 vs. 2) and three to *Armament* for female minority groups (0 vs. 3).

Table 25
Group Qualifications for Disarmament
Under the Informational Set

Groups	Elimination	Uni- lateral Reduction	Multit- lateral Reduction	Arms Control
All Female	1	1	1	
Female Majority	1	2	1	
Balanced		1		
Male Majority		1		1
All Male			2	2

Note. N = 3,4,1,2,4, in order.

Table 26
Group Qualifications for Disarmament
Under the Relational Set

	Elimination	Uni- lateral Reduction	Multit- lateral Reduction	Arms Control
Groups				
All Female	1	2		
Female Majority		2	1	1
Balanced		1	2	
Male Majority	N/A	N/A	N/A	N/A
All Male			1	

Note. N = 3,4,3,0,1, in order.

categories devised for *Disarmament* for groups under both instructional sets are reported in Table 27 as frequencies and as proportions, based on a group's total number of reasons. While no striking differences are readily apparent, it can be noted that under the informational set the order of categories, according to proportions, for the all female and majority female groups is similar, with *Emotional/Physical Welfare* and *Social/Environmental Welfare* assuming the greater proportion of reasons than *International Relations*. For the single balanced group, it can be seen that the reasons reflected themes related mostly to *Emotional/Physical Welfare* and *International Relations*. Male majority and all male groups' reasons were found to be concerned largely with: *International Relations*, followed by *Social/Environmental Welfare* and *Emotional/Physical Welfare*. Groups under the relational set revealed a comparable trend, with the exception of a slightly greater emphasis on themes related to *International Relations* for the all female and majority female groups. And, for both instructional sets, reasons related to *Pacific Beliefs/Actions* were expressed least often.

As with individuals' reasons, those provided by the groups were also read to determine whether the two instructional sets effected different group emphases on a care or justice perspective; however, the number of reasons per perspective within categories were so few, with, in fact, numerous categories lacking any count, as to make an interpretable comparison unachievable. In order to look at the two perspectives across group compositions, then, the perspectives were tallied by collapsing across categories; the frequencies and proportions are presented in Table 28, and depicted graphically in Figures 2 and 3. What is revealed in this comparison are both the similarities and the differences amongst groups under either the informational or relational set. While the care perspective in reasons decreases with an increase in male group members for informational and relational conditions, it is also evident that the relational set groups show an increased emphasis on a

Table 27
Categories for Group Reasons for Disarmament
Under Informational and Relational Sets

Informational Set								
Groups	Emotional/ Physical Welfare		International Relations		Social/ Environmental Welfare		Pacific Beliefs/ Actions	
	N	%	N	%	N	%	N	%
All Female	3	33	2	22	3	33	1	11
Female Majority	7	58	1	08	4	33	0	00
Balanced	2	67	1	33	0	00	0	00
Male Majority	1	17	3	50	2	33	0	00
All Male	3	30	4	40	3	30	0	00
Relational Set								
All Female	4	44	3	33	2	22	0	00
Female Majority	4	36	4	36	3	28	0	00
Balanced	3	43	1	14	2	29	1	14
Male Majority	N/A		N/A		N/A		N/A	
All Male	1	33	2	67	0	00	0	00

Note. N = 3,4,1,2,4 for Informational;
 3,4,3,0,1 for Relational.

Table 28
Care and Justice in Group Reasons for Disarmament
Under Informational and Relational Sets

	Informational Set Perspectives					
	Care		Justice		Neither	
	N	%	N	%	N	%
All Female	6	67	2	22	1	11
Female Majority	7	58	3	25	2	17
Balanced	2	67	0	00	1	33
Male Majority	1	17	3	50	2	33
All Male	1	10	6	60	3	30

Relational Set Perspectives						
All Female	7	78	0	00	2	22
Female Majority	5	45	4	36	2	18
Balanced	2	29	5	71	0	00
Male Majority	N/A		N/A		N/A	
All Male	0	00	2	67	1	33

Note. N = 3,4,1,2,4 for Informational;
3,4,3,0,1 for Relational.

Figure 2. Care in Group Reasons for Disarmament Under Informational and Relational Sets

Figure 3. Justice in Group Reasons for Disarmament Under Informational and Relational Sets

justice perspective from the female majority compositions through to male majority groups. Thus, the voice of care seems to come through more under the condition of an informational as compared to a relational set for mixed-sex groups. Same-sex groups differed consistently in the all female groups' reasons stressing a care perspective and all male groups a justice perspective.

Group reasons for *Armament*. The tabled frequencies of four types of provisions (uni-lateral maintain; multi-lateral maintain; uni-lateral maintain or increase; multi-lateral maintain or increase) for *Armament*, given in groups' reasons, do not lend themselves to a sense of differences between the instructional sets for any of the group compositions (see Table 29).

As pictured in Table 30, the relative frequencies for the five categories developed to capture themes for *Armament* were notably similar in distribution for groups under both instructional sets. Three categories caught the majority of group reasons for both conditions: *Arms Control/War Prevention* was the theme most often reflected in groups' reasons, followed by *Fear and Distrust*, and *Socio-Economic*.

The problem of too few counts per category to permit a delineation of care and justice perspectives within categories was encountered for *Armament* just as it was with *Disarmament*. Consequently, the perspectives were collapsed across categories, with the frequencies and proportions for each perspective displayed in Table 31. As with individuals' reasons for *Armament*, groups' reasons were also distinguished by the virtual absence of a care perspective, creating, in its absence, the strong presence of a justice perspective, regardless of group composition or instructional set.

Summary of groups on nuclear arms dilemma. With respect to group choices of *Disarmament* or *Armament*, an overall significant difference emerged amongst the five group compositions. Same-sex groups were similar in their relative greater

Table 29
Group Qualifications for Armament
Under Informational and Relational Sets

Informational Set				
Groups	Uni-lateral Maintain	Multi-lateral Maintain	Uni-lateral Maintain/ Increase	Multi-lateral Maintain/ Increase
All Female	1			
Female Majority	N/A	N/A	N/A	N/A
Balanced	2		1	
Male Majority	2			
All Male	N/A	N/A	N/A	N/A
Relational Set				
All Female			1	
Female Majority	N/A	N/A	N/A	N/A
Balanced			1	
Male Majority	4			
All Male	2		1	

Note. N = 1,0,3,2,0 for Informational;
 1,0,1,4,3 for Relational.

Table 30
Categories for Group Reasons for Armament
Under Informational and Relational Sets

Informational Set										
Categories	All Female		Female Majority		Balanced		Male Majority		All Male	
	N	%	N	%	N	%	N	%	N	%
Fear/ Distrust	1	33	N/A		1	11	1	17	N/A	
Dominion/ Power	0	00	N/A		0	00	0	00	N/A	
Arms Control/ War Prevention	2	67	N/A		5	56	2	33	N/A	
Arms Superiority /War Prevention	0	00	N/A		1	11	0	00	N/A	
Socio- Economic	0	00	N/A		2	22	3	50	N/A	
Relational Set										
Fear/ Distrust	1	33	N/A		0	00	2	18	3	33
Dominion/ Power	0	00	N/A		0	00	1	09	0	00
Arms Control/ War Prevention	1	33	N/A		2	67	6	55	3	33
Arms Superiority /War Prevention	0	00	N/A		1	33	0	00	0	00
Socio- Economic	1	33	N/A		0	00	2	18	3	33

Note. N = 1,0,3,2,0 for Informational;
1,0,1,4,3 for Relational.

Table 31
Care and Justice in Group Reasons for Armament
Under Informational and Relational Sets

	Informational Set Perspectives					
	Care		Justice		Other	
	N	%	N	%	N	%
All Female	0	00	3	100	0	00
Female Majority	N/A		N/A		N/A	
Balanced	0	00	8	89	1	11
Male Majority	0	00	4	67	2	33
All Male	N/A		N/A		N/A	
	Relational Set Perspectives					
	N	%	N	%	N	%
All Female	0	00	2	67	1	33
Female Majority	N/A		N/A		N/A	
Balanced	0	00	2	67	1	33
Male Majority	1	09	8	73	2	18
All Male	0	00	6	67	3	33

Note. N = 1,0,3,2,0 for Informational;
1,0,1,4,3 for Relational.

frequency of choosing *Disarmament* over *Armament*. Mixed-sex groups, in contrast, showed an increase in the choice of *Armament* with an increase in the number of male group members. Bearing in mind the smaller sample sizes for comparisons between instructional sets, it was observed that whereas choices amongst group compositions did not differ significantly under the informational set, they did differ significantly under the relational set. All female and female majority group compositions demonstrated the most consistency across instructional sets; balanced group compositions revealed opposing trends between the two sets; male majority groups were evenly split under the informational set but undivided in their support of *Armament* under the relational set; all male groups evidenced greater support of *Disarmament* under the informational set but this shifted to favour *Armament* under the relational set. To understand these findings, females and males were compared on their individual positions, the number of times they shifted direction from their individual to group positions, and the number of times they shifted towards either position. Significant differences between the sets for males, but not females, was observed, suggesting more support of *Armament* by males who happened to be in the relational set. Significantly more females than males shifted their position under the relational set, with the analyses of directions of shifts being inconclusive due to the extremely small sample size. Thus, the difference observed between the instructional sets for the group choices of *Disarmament* or *Armament* seem to be related to the greater representation of the position of *Armament* on behalf of males in the relational set; this also suggests that males were somewhat more influential in the group's choice of position in the relation condition.

Qualifications of groups' choices of *Disarmament* revealed a move away from provisos of elimination and uni-lateral reduction towards those concerned with multi-lateral reduction and arms control that appeared to correspond with a decrease in the number of female group members. This trend, while weak, held for

both instructional sets. No qualitative differences in provisos accompanying the position of *Armament* were noticed amongst group compositions under either instructional set; in general, group provisos were concerned with a uni-lateral maintenance of nuclear arms in the United States.

With respect to group reasons provided in support of *Disarmament*, few distinctions amongst groups were apparent for categories. All female groups tended to offer reasons emphasizing themes of *Emotional/Physical Welfare* whereas all male groups' reasons stressed themes related to *International Relations*. A comparable trend was noted for female majority as compared to male majority group compositions for the informational set. *Emotional/Physical Welfare* captured most of the reasons presented by balanced group compositions. When the groups under both instructional sets were compared on the presence of a care or justice perspective in their reasons, it was observed that the voice of care faded with a decrease in the number of female group members, and, moreover, that this shift in emphasis from a care to a justice perspective was somewhat more apparent for groups in the relational set. While this comparison is weakened by sample size, it suggests the possibility that females, who most often used this perspective in their individual reasons, were less influential under the relational set, resulting in a weaker representation of the care perspective.

Reasons within the five categories for the position of *Armament* were distributed relatively equivalently for groups under both instructional sets. Once more, the voice of care was noticeable only in its absence from group reasons, thereby enhancing the presence of a justice perspective across all group compositions under both sets.

Group Interactions

Group members' rankings of group interactions. As in the first experiment, the nominations for each group member in the mixed-sex group compositions were tallied following the scoring procedure of Jose and McCarthy (1988). Separate 2 (Instructional Set) X 2 (Sex) X 3 (Group Composition) analyses of variance were then performed on each of the four questions. For the question of who talked the most, a significant main effect emerged for *Sex*, $F(1,84)=4.96, p<.03$; however, this main effect was qualified both by a two-way interaction between *Instructional Set* and *Sex*, $F(1,84)=4.48, p<.04$, and by a three-way interaction amongst *Instructional Set*, *Sex*, and *Group Composition*, $F(2,84)=3.13, p<.05$ (See Table 32). The three-way interaction was further explored through a series of simple interaction analyses that yielded a significant interaction effect for *Instructional Set X Sex* for balanced groups only, $F(1,84)=7.73, p<.01$. This significant simple interaction was then subjected to a series of simple simple main effects analyses, resulting in a significant difference between female and male mean rankings ($M=4.71$ vs. $M=9.29$, in order) for the relational instructional set only, $F(1,84)=11.41, p<.01$; no significant difference was obtained between female and male mean rankings for the informational instructional set. Differences between the instructional sets for female mean rankings, while close, were not within conventionally acceptable levels of statistical significance ($F(1,84)=3.88, p<.10$); a similar finding was observed for male mean rankings ($F(1,84)=3.85, p<.10$). In sum, female and male mean rankings differed significantly only under relational conditions in balanced groups, with the mean for females suggesting lower rankings on talkativeness than males.

Table 33 presents the mean talkativeness rankings for females and males for each of the mixed-sex group compositions. As shown, females' mean rankings were higher under the informational instructional set than the relational instructional set for majority-female and balanced mixed-sex group compositions whereas males'

Table 32
Summary Table for Instructional Set X Sex X Group Composition
ANOVA on Talkativeness Scores

Source	df	MS	F
Main Effects			
Instructional Set (A)	1	.00	.00
Sex (B)	1	36.46	4.96*
Group Composition (C)	2	3.04	.41
Two-Way Interactions			
A X B	1	32.94	4.48*
A X C	2	2.74	.37
B X C	2	7.81	1.06
Three-Way Interactions			
A X B X C	2	22.99	3.13*
Residual	84	7.35	

* $p < .05$

Table 33
Mixed-Sex Group Means for Informational and Relational
Instructional Sets on Talkativeness

Female Majority		
	Females	Males
	<u>Mean</u>	<u>Mean</u>
Informational Set	7.42	5.75
Relational Set	6.58	8.25
Balanced		
Informational Set	7.38	6.63
Relational Set	4.71 ^a	9.29 ^a
Male Majority		
Informational Set	4.83	7.72
Relational Set	6.25	7.25

^a Means differ significantly, $p < .01$.

Note. In order of group compositions, $n = 12, 8$, and 4 for females; this order is reversed for males.

mean rankings followed the reverse trend. Females' mean rankings were also higher than males' under the informational set as compared to being lower than males' mean rankings under the relational set. In general, mean rankings of talkativeness in the relational condition paralleled the results found in the first experiment, with males' means exceeding females whether they constituted a minority of one or a majority of three. Although females' talkativeness rankings were higher under the relational as compared to the informational set for the minority-female group composition, males' mean rankings were higher than females' for both conditions. Thus, females' mean talkativeness rankings appear to be higher under the informational as compared to the relational set while males' rankings suggest the opposite trend when the groups are composed of a female majority or balanced. In the situation of a female minority, this pattern seems to give way to a consistently higher male means regardless of the instructional set.

On the question of who was the most concerned about group feelings and group harmony, the main effect of *Sex* achieved significance, $F(1,84) = 3.89, p < .05$, but this main effect entered into a significant two-way interaction between *Sex* and *Group Composition*, $F(2,84) = 3.82, p < .03$ (see Table 34). Tests of simple main effects were undertaken to examine this interaction further, indicating a significant difference between females' and males' mean socio-emotional rankings for the group composition of majority-female, minority-male ($F(1,84) = 10.54, p < .01$; $M = 7.71$ vs. $M = 4.88$, respectively). In addition, a significant difference was obtained across the three mixed-sex group compositions for males' rankings, $F(2,84) = 3.35, p < .05$, with their socio-emotional rankings increasing with an increase in male group membership from minority to majority conditions ($M = 4.88$; $M = 6.70$; $M = 7.13$, in order). In contrast, females' mean rankings across group compositions did not differ significantly, appearing instead to be relatively consistent regardless of

Table 34
Summary Table for Instructional Set X Sex X Group Composition
ANOVA on Socio-Emotional Scores

Source	<u>df</u>	<u>MS</u>	F
Main Effects			
Instructional Set (A)	1	.00	.00
Sex (B)	1	17.74	3.89*
Group Composition (C)	2	1.48	.32
Two-Way Interactions			
A X B	1	1.17	.26
A X C	2	.10	.02
B X C	2	17.43	3.82*
Three-Way Interactions			
A X B X C	2	6.46	1.42
Residual	84	4.56	

* $p < .05$

female group membership ($M = 7.71$; $M = 7.30$; $M = 6.63$, in order of majority-female to minority-female group compositions).

A significant main effect for Sex was obtained for the question of who had the best ideas, $F(1,84) = 19.52$, $p < .001$ (see Table 35), with the male mean ranking exceeding that of females', regardless of instructional set or group composition ($M = 7.79$ vs. $M = 6.21$).

No significant differences emerged for the question of who was the most task-directed.

As in the previous experiment, a stepwise discriminant function analysis was carried out separately for the two instructional sets on mixed-sex group compositions. And, as before, the four measures of perceived group interactions served as the predictor variables and sex as the variable of group membership to be predicted. The pooled within-groups correlations between the four measures for the condition of informational set are presented in Table 36; as exhibited, talkativeness, task, and best ideas show moderate intercorrelations, with a somewhat stronger correlation appearing between talkativeness and task-directedness; socio-emotional evinced but a moderate correlation with task-directedness and an even weaker relationship with talkativeness and best ideas; best ideas and task-directedness also showed a moderate correlation.

Two measures met the selection criteria (smallest Wilk's lambda, and correspondingly largest F -to-enter), with best ideas entered firstly, $F(1,46) = 5.45$, $p \leq .02$, and socio-emotional entered secondly, $F(2,45) = 6.25$, $p \leq .004$. No other predictor variables met the selection criteria to be entered. Thus, a statistically significant canonical discriminant function equation emerged for best ideas and socio-emotional functions in the prediction of female or male group membership,

Table 35
Summary Table for Instructional Set X Sex X Group Composition
ANOVA on Best Idea Scores

Source	<u>df</u>	<u>MS</u>	<u>F</u>
Main Effects			
Instructional Set (A)	1	.00	.00
Sex (B)	1	72.53	19.52*
Group Composition (C)	2	6.05	1.63
Two-Way Interactions			
A X B	1	3.54	.95
A X C	2	.29	.08
B X C	2	.88	.24
Three-Way Interactions			
A X B X C	2	6.00	1.61
Residual	84	3.72	

* $p < .001$

Table 36
Correlations Amongst Four Measures of
Group Interactions for Informational Set

	Talk	Task	Socio- emotional	Ideas
Talk	1.00			
Task	.63	1.00		
Socio-emotional	.43	.53	1.00	
Ideas	.51	.47	.38	1.00

$X^2(2) = 11.03, p \leq .004^{20}$. Table 37 displays the percent of groups classified correctly on the basis of the discriminant function equation, showing equally good predictions for female and male group membership under the informational instructional set.

For the relational instructional set, the pooled within-groups correlation matrix revealed a negative correlation between talkativeness and socio-emotional measures, with all other measures evincing moderate, positive correlations save the negligible one obtained between socio-emotional and best ideas (see Table 38). In this analysis, three measures met the selection criteria: first, best ideas was entered, $F(1,46) = 11.28, p \leq .001$, followed by talkativeness, $F(2,45) = 6.89, p \leq .002$, and then task-directedness, $F(3,44) = 5.00, p \leq .004$. Thus, best ideas, talkativeness, and task-directedness combined to form a statistically significant discriminant function equation to predict female and male group membership, $X^2(3) = 13.06, p \leq .004^{21}$; Table 39 reports the percent of groups that were classified correctly, which were identical to the predication rates for the informational set. Taken together, the discriminant function analyses suggest that indices corresponding to the demands of the instructional sets did not serve as good predictors of sex group membership under the same instructional conditions; however, the different discriminant function equations do point to the differences between the two conditions for perceptions of group interactions.

-
20. The unstandardized canonical discriminant function coefficients are as follows: $-.387$ for socio-emotional and $.526$ for best ideas, with a constant of $-.976$. The classification function coefficients (Fisher's linear discriminant functions) for females are 1.221 (socio-emotional) and 1.359 (best ideas), with a constant of -9.604 ; for males, these are $.823$ (socio-emotional) and 1.902 (best ideas), with a constant of -10.612 .
21. The unstandardized canonical discriminant function coefficients for the relational instructional set are $.196$ for talkativeness, $-.162$ for task-directedness, and $.410$ for best ideas, with a constant of -3.108 . The classification function coefficients for females are $.378$ for talkativeness, $.783$ for task-directedness, and $.866$ for best ideas, with a constant of -7.062 . For males, these coefficients are $.602$ for talkativeness, $.598$ for task-directedness, and 1.335 for best ideas, with a constant of -10.615 .

Table 37
Predicted Group Membership on the Basis of
Best Ideas and Socio-emotional Measures

Actual Group	<u>N</u>	Predicted Group Membership	
		Females	Males
Females	24	17 70.8%	7 29.2%
Males	24	7 29.2%	17 70.8%

Note. Percent of grouped cases classified correctly: 70.83%

Table 38
Correlations Amongst Four Measures of
Group Interactions for Relational Instructional Set

	Talk	Task	Socio- emotional	Ideas
Talk	1.00			
Task	.31	1.00		
Socio-emotional	-.15	.30	1.00	
Ideas	.41	.49	.06	1.00

Table 39
Predicted Group Membership on the Basis of
Best Ideas, Talkativeness, and Task-Directedness

Actual Group	N	Predicted Group Membership	
		Females	Males
Females	24	17 70.8%	7 29.2%
Males	24	7 29.2%	17 70.8%

Note. Percent of grouped cases classified correctly: 70.83%

Same-sex groups. To determine whether first-rank nominations were distributed differentially in all female as compared to all male groups, a tally of the number of first-ranked speakers per question per group was done. The results of this frequency count of nominations indicated a rather similar pattern between the two same-sex group compositions for each of the four questions (see Table 40); a chi-square analysis resulted in non-significant differences.

Summary of group members' rankings. Significant results were obtained on three of the four measures (talkativeness, socio-emotionality, best ideas) of perceived interactions amongst group members for mixed-sex groups. Statistical analysis of students' nominations of who talked the most yielded a significant three-way interaction amongst *Instructional Set*, *Sex*, and *Group Composition* that was found, after a series of tests of simple interactions and simple simple main effects, to be specific to balanced groups in the relational set; males mean ranking was significantly higher than females. On the nominations for socio-emotional types of interactions, the significant two-way interaction between *Sex* and *Group Composition* was explored further through a series of simple main effects to reveal that female mean rankings differed significantly from males only in female majority group compositions. Mean rankings differed significantly amongst the group compositions for males only, with increases from minority to majority compositions; females' mean rankings were relatively consistent across the group compositions. Males also received significantly higher mean rankings on best ideas than females.

The discriminant function analyses revealed two different equations for the instructional sets, with both equations predicting sex group membership equally well. For the informational set, the measures of best ideas and socio-emotionality achieved significant levels of discrimination between the sexes to be entered into the equation, whereas talkativeness, which was emphasized in the set manipulation for all group members, did not. In contrast, females and males were discriminated by

Table 40
Number of First-Ranked Speakers in
Same-Sex Groups

Number of speakers per question per group		
	All Female	All Male
Who talked the most?		
Informational Set	9	6
Relational Set	9	8
Who was most task-directed?		
Informational Set	8	10
Relational Set	10	12
Who was most concerned about group feelings, group harmony?		
Informational Set	6	10
Relational Set	11	9
Who had the best ideas?		
Informational Set	9	8
Relational Set	8	10

best ideas, talkativeness, and task-directedness for the relational set, omitting the measure of socio-emotionality, which had been stressed in this instructional set. In other words, when the instructional set emphasized one type of interaction over the other, nominations of females or males were not discriminable on those dimensions.

As measures of social influence attempts, the results are less readily interpreted. The significantly higher mean rankings of males as having the best ideas coupled with its role in discriminating between males and females in both instructional sets suggests that they were perceived as somewhat more influential than females. The combined role of best ideas, talkativeness, and task-directedness to discriminate females and males in the relational set implies that males were seen as engaging interaction styles which are associated with attempts to influence, and thus indicates that males were perceived as exerting more influence attempts in the relational as compared to the informational set. The changes in socio-emotional means across the group compositions for males indicated an expansion in males' interaction styles commensurate with higher ratios of male group members, whereas females' rankings evidenced somewhat more consistency in socio-emotional interaction styles. No discernible differences were obtained between same-sex groups when they were compared on the number of nominees they selected for different interaction styles.

Recorded group interactions. As mentioned previously, group interactions were coded from the transcriptions of the audio-tape recordings of the group discussions using Bales' (1950, 1970) twelve-category system that collapses into a four-fold framework (positive social-emotional, attempted answers, attempted questions, negative social-emotional). Individuals' frequency scores for these categories were then expressed proportionately in two ways: one set of proportion scores was based on an individual's total number of communication acts; a second proportionate measure was based on a group's total number of communication acts.

These two measures have been used because they address two different questions about group members' interactions. The first one constitutes proportionate measures reflecting a breakdown of the types of an individual's communication acts irrespective of the group scores, whereas the second proportionate measures represent a breakdown of types of an individual's interactions relative to the communication acts produced by group members as a whole. Recorded group interactions are analyzed separately for mixed-sex and same-sex groups, as done with measures of perceived group interactions.

Mixed-sex groups. In order to examine whether the groups differed in the total number of communication acts they produced, the total scores were subjected to a 2 (Set) X 3 (Mixed-Sex Group Compositions) analysis of variance. No significant differences were found amongst the groups or between the two instructional sets. In addition, no significant differences were obtained when the amount of group discussion time was analyzed via the same method.

Separate 2 (Set) X 2 (Sex) X 3 (Mixed-Sex Group Compositions) between-subjects analyses of variance were conducted on the four categories of group interactions (positive social-emotional, attempted answers, questions, negative social-emotional) for the two types of proportionate measures to assess differences between female and male interactions for the different group compositions under different instructional sets. The category of *Negative Social-Emotional* interactions resulted in extremely low scores, with numerous participants' scores equal to zero, and, therefore, this category was dropped from the analysis; the category of *Positive Social-Emotional* will thus be referred to hereafter as *Socio-Emotional*.

A significant main effect emerged for *Sex* on the individually-based measure of socio-emotional interactions, $F(1,84) = 4.25, p < .05$ (see Table 41); females' mean proportionate score on this measure was significantly higher than that obtained by

Table 41
Summary Table for Instructional Set X Sex X Group Composition
ANOVA on Recorded Socio-Emotional Interactions

Source	<u>df</u>	<u>MS</u>	<u>F</u>
Main Effects			
Instructional Set (A)	1	106.26	.90
Sex (B)	1	500.00	4.25*
Group Composition (C)	2	7.57	.06
Two-Way Interactions			
A X B	1	2.11	.02
A X C	2	71.94	.61
B X C	2	54.62	.46
Three-Way Interactions			
A X B X C	2	158.50	1.35
Residual	84	117.613	

* $p < .05$

males ($M = 25.06$ vs. $M = 20.42$, respectively).²²

Analysis of variance performed on attempted answers, or instrumental-like interactions, also resulted in a significant main effect for Sex based on individuals' proportion scores, $F(1,84) = 6.40$, $p < .02$ (see Table 42), with males' scores achieving a significantly higher mean than females' ($M = 66.88$ vs. $M = 61.42$). No significant differences emerged when the analysis was conducted on group-based proportions.

On the proportional measure of attempted questions, a significant main effect emerged for Sex, $F(1,84) = 4.00$, $p < .05$ (see Table 43). Females' mean score for attempted questions was significantly higher than that for males' ($M = 12.77$ vs. $M = 10.25$, respectively). When the analysis was conducted using the group-based proportion scores, no significant differences were observed.²³

Same-sex groups. As with the mixed-sex groups, the totals for communication acts and group discussion time were examined by way of separate 2 (Instructional Set) X 2 (Same-Sex Group Compositions) analyses of variance; no significant differences emerged for either analysis.

22. The analysis of variance conducted on the group-derived proportionate measures was deemed problematic, and will thus not be discussed further.

23. As with the analyses of perceived group interactions, an attempt to incorporate the results from discriminant function analyses was made. However, it was decided that these analyses contributed little to an understanding of interactions amongst group members under the different instructional sets. When the informational set was assessed, attempted answers and attempted questions combined to form a significant equation, but the rate of predicted group membership was barely above chance. For the relational set, no predictors reached statistical significance.

Table 42
Summary Table for Instructional Set X Sex X Group Composition
ANOVA on Recorded Interactions Of Attempted Answers

Source	<u>df</u>	<u>MS</u>	<u>F</u>
Main Effects			
Instructional Set (A)	1	1.5	.01
Sex (B)	1	931.61	6.40*
Group Composition (C)	2	112.33	.77
Two-Way Interactions			
A X B	1	105.80	.73
A X C	2	50.32	.35
B X C	2	50.55	.35
Three-Way Interactions			
A X B X C	2	20.18	.14
Residual	84	145.51	

* $p < .02$

Table 43
Summary Table for Instructional Set X Sex X Group Composition
ANOVA on Recorded Interactions Of Attempted Questions

Source	df	MS	F
Main Effects			
Instructional Set (A)	1	10.01	.22
Sex (B)	1	180.00	4.00*
Group Composition (C)	2	23.79	.53
Two-Way Interactions			
A X B	1	30.01	.67
A X C	2	66.67	1.48
B X C	2	45.03	1.02
Three-Way Interactions			
A X B X C	2	100.31	2.23
Residual	84	44.95	

* $p < .05$

To see whether types of group interactions differed between groups of females and groups of males, separate 2 (Instructional Set) X 2 (Group Composition) analyses of variance were undertaken on Bales' categories of socio-emotional, attempted answers, and attempted questions; as with the previous analyses, proportion scores were calculated on both an individual and group bases.

On the measure of socio-emotional interactions, analyses of both types of proportion scores yielded similar results. Based on individuals' total number of communication acts, a significant main effect was achieved for *Set*, $F(1,60)=4.27$, $p<.05$, and for *Group Composition*, $F(1,60)=11.70$, $p\leq.001$ (see Table 44). All female groups evidenced a significantly higher mean of socio-emotional interactions than males ($M=29.44$ vs. $M=19.34$, respectively); higher mean socio-emotional scores were obtained under the relational as compared to the informational set ($M=27.44$ vs. $M=21.34$, in order). Results obtained from group-based proportion scores virtually parallel those for individually-derived ones: Table 45 presents the ANOVA summary for the significant main effects for *Set*, $F(1,60)=5.71$, $p\leq.02$, and for *Group Composition*, $F(1,60)=6.63$, $p\leq.01$. Mean proportion scores of socio-emotional interactions were significantly higher for all female as compared to all male groups ($M=6.59$ vs. $M=4.84$, respectively), and for the relational in contrast to the informational set ($M=6.53$ vs. $M=4.91$, in order). Thus, all female groups achieved higher mean proportions of socio-emotional interactions than all male groups, with the relational condition related to higher mean scores than the informational condition.

Using the individually based proportion measures of attempted answers, a significant main effect was observed for *Group Composition*, $F(1,60)=10.31$, $p\leq.002$, while the main effect for *Set* was above conventional levels of statistical acceptability, $p=.08$ (see Table 46). In contrast to measures of socio-emotional interactions, all male group means significantly exceeded all female group ones for

Table 44
Summary Table for Instructional Set X Group Composition
ANOVA on Recorded Socio-Emotional Interactions

Source	<u>df</u>	<u>MS</u>	F
Main Effects			
Instructional Set (A)	1	594.14	4.27*
Group Composition(B)	1	1630.14	11.70**
Two-Way Interactions			
A X B	1	19.14	.14
Residual	60	132.30	

* $p < .05$

** $p \leq .001$

Table 45
Summary Table for Instructional Set X Group Composition
ANOVA on Recorded Socio-Emotional Interactions (Group-Based)

Source	<u>df</u>	<u>MS</u>	F
Main Effects			
Instructional Set (A)	1	42.25	5.71*
Group Composition(B)	1	49.00	6.63*
Two-Way Interactions			
A X B	1	.06	.01
Residual	60	7.39	

* $p \leq .02$

Table 46
Summary Table for Instructional Set X Group Composition ANOVA
on Recorded Interactions of Attempted Answers (Group-Based)

Source	df	MS	F
Main Effects			
Instructional Set (A)	1	365.77	3.15
Group Composition(B)	1	1198.89	10.31*
Two-Way Interactions			
A X B	1	165.77	1.43
Residual	60	116.30	

* $p \leq .002$

attempted answers ($M = 69.25$ vs. $M = 60.59$, respectively), thus suggesting a greater proportion of instrumental-like interactions for all male groups. No significant differences emerged when the group-based totals were used in the expression of proportions.

Regardless of whether the proportion scores for attempted questions were based on individuals' totals or groups' totals, no significant differences were found between the all female and all male groups.

Summary of interaction data. Females and males within mixed-sex group compositions differed significantly on three categories of Bales' interaction styles (socio-emotional, attempted answers, attempted questions). Socio-emotional types of interactions were significantly higher for females than males; attempted answers, or instrumental-like interactions, were significantly higher for males than females; attempted questions were significantly higher for females than males. In other words, when the types of interactions performed by group members were assessed, males' interaction styles were marked by greater proportions of attempted answers whereas females' were distinguished by higher proportions of socio-emotional and attempted questions. It would thus seem that when females and males interaction styles are compared, males contributed more instrumental-like interactions, suggesting more influence attempts by males than by females. Females interaction styles, on the other hand, were associated with group harmony and asking questions, which suggest fewer attempts to influence others.

Looking at females and males types of contributions relative to the group's total productivity, the only significant difference to emerge was that for the category of socio-emotionality. The significant two-interaction between *Sex* and *Group Composition* was found, through tests of simple main effects, to be specific to female majority group compositions wherein female means were significantly higher than

male means, a finding compatible with rankings of group members' socio-emotional interactions.

Analyses of same-sex groups lend further support to the specialization in types of interaction styles by females and males. All female groups produced significantly more socio-emotional interactions than all male groups, and this held for both types of proportion measures. Both female and male groups produced more socio-emotional interactions under the relational as compared to the informational set. All male groups, on the other hand, were characterized by significantly more attempted answers than all female groups; no differences emerged for group-based proportions. The category of attempted questions did not result in any significant differences between these two groups.

Post-Experimental Questionnaires

Self-rating of influence. To see if females and males differed in their self-ratings of the degree of influence they felt they had over group decisions, analyses of variance were conducted for mixed-sex and same-sex groups. A 2 (Instructional Set) X 2 (Sex) X 3 (Mixed-Sex Group Compositions) analysis of variance was performed on self-ratings, resulting in a significant main effect for *Sex*, $F(1,84) = 4.81$, $p \leq .03$, which was qualified by a significant two-way interaction between *Sex* and *Group Composition*, $F(2,84) = 4.29$, $p < .02$ (see Table 47). To explore this interaction further, a simple main effects analysis was conducted, indicating a significant difference between female and male mean self-ratings for the balanced group compositions, $F(1,84) = 4.74$, $p < .05$, and for the female minority group compositions, $F(1,84) = 7.2$, $p < .01$; females' mean self-ratings were lower than males' in balanced groups ($M = 4.27$ vs. $M = 4.77$, respectively) and in female minority groups ($M = 3.46$ vs. $M = 5.19$, respectively). Moreover, females' self-ratings were found to differ significantly amongst group compositions, $F(2,84) = 5.50$, $p < .01$, with their mean

Table 47
Summary Table for Instructional Set X Sex X Group Composition
ANOVA on Self-Ratings of Influence

Source	<u>df</u>	<u>MS</u>	<u>F</u>
Main Effects			
Instructional Set (A)	1	.57	.40
Sex (B)	1	6.87	4.81*
Group Composition (C)	2	3.41	2.39
Two-Way Interactions			
A X B	1	3.10	2.17
A X C	2	2.74	1.92
B X C	2	6.13	4.29*
Three-Way Interactions			
A X B X C	2	.24	.16
Residual	84	1.43	

* $p < .03$

self-ratings decreasing from female majority groups ($M=5.01$) to balanced groups ($M=4.27$) to female minority groups ($M=3.46$). In other words, female's self-ratings seemed to be affected by the composition of the group whereas males' self-ratings remained relatively constant.

No significant differences were obtained between all female and all male groups on the self-rating measure of influence.

Influence ratings from others. Group members' ratings of each other on how much influence they were seen as exerting on a group's decisions were analyzed via a 2 (Instructional Set) X 2 (Sex) X 3 (Mixed-Sex Group Compositions) analysis of variance to determine whether females and males influence ratings differed. Sex was the only significant main effect that came out of this analysis, $F(1,84)=9.50$, $p \leq .003$ (see Table 48), with females mean rating of influence being significantly lower than that for males ($M=14.01$ vs $M=15.73$). In short, regardless of group composition or instructional set, females were rated as less influential by other group members than were males.

No significant differences were observed between same-sex groups on group members ratings of each other's degree of influence over group decisions.

Summary of influence ratings. For mixed-sex groups, mean self-ratings of influence indicated that females rated themselves as significantly less influential than males rated themselves in the balanced and female minority group compositions. Moreover, females' self-ratings differed significantly amongst the group compositions whereas males' self-ratings did not. Thus, females' self-ratings of influence appeared to be affected by the sex composition of the groups, with the overall effect suggesting that they saw themselves as less influential in groups where they did not constitute the majority. Males, however, consistently rated themselves as higher in self-influence, and even when they constituted a minority, they did not rate themselves as significantly more or less influential than females who composed

Table 48
Summary Table for Instructional Set X Sex X Group Composition
ANOVA on Group Ratings of Influence

Source	<u>df</u>	<u>MS</u>	<u>F</u>
Main Effects			
Instructional Set (A)	1	3.15	.34
Sex (B)	1	88.41	9.50*
Group Composition (C)	2	9.48	1.02
Two-Way Interactions			
A X B	1	5.78	.62
A X C	2	.51	.06
B X C	2	8.60	.92
Three-Way Interactions			
A X B X C	2	13.77	1.48
Residual	84	9.31	

* $p \leq .003$

the majority. Group members' ratings of each others' degree of influence indicated that males were rated as significantly higher in influence than females. Thus, the results of the self-rating measures suggest that males regarded themselves and were regarded by others as having more influence over group decisions.

No differences between same-sex groups were observed on influence ratings.

Agreement with group's position. To look at the extent to which group members agreed with the position taken by the group on the *Nuclear Arms Dilemma*, a 2 (Instructional Set) X 2 (Sex) x 3 (Mixed-Sex Group Compositions) between-subjects analysis of variance was performed on ratings produced by group members. No significant differences were achieved.

For same-sex subjects, a 2 (Instructional Set) by 2 (Group Composition) between-subjects analysis of variance was conducted on group members' ratings of agreement, but no significant differences were observed between all female and all male groups.

Means for both same-sex and mixed-sex groups indicated a high degree of agreement with groups' positions.

Agreement with group reasons. As with the preceding analyses, separate analyses of variance were undertaken, using the same mixed-sex and same-sex models as above, on group members' ratings of the degree to which they agreed with the reasons presented by the group in support of the group's position. No significant differences emerged for analyses of mixed-sex groups or same-sex groups, with the means for both suggesting a high degree of agreement with groups' reasons.

Overview

Both empirical studies of this dissertation addressed themselves to social influence processes between women and men in same-sex and mixed-sex small groups and, relatedly, to their function in the promotion of a particular social group's (i.e., women or men) perspective on issues of peace and security.

Preliminary assessments were made of women's and men's attitudes, beliefs and concerns on nuclear-related issues, including a qualitative appraisal of their respective orientations to the United States' use of nuclear weapons as a means towards peace. Information gained from these preliminary assessments of individuals was then compared to those views brought forward by groups. As acknowledged throughout the report of group level data, group trends were weakened by their small sample size; however, the resulting trends formed coherent clusters for interpretation and discussion.

When the results of the two experiments are considered together, the main findings for women and men, at the individual level, are as follows: women tend to express a more pacific, less militaristic position, and to convey a higher degree of concern on nuclear-related issues; more women than men took the stance of *Disarmament*, and more men than women adopted the position of *Armament*; finally, women were inclined to use a care perspective and men a justice perspective when elaborating their individual reasons in support of *Disarmament*, but not when they chose *Armament*, for which a justice perspective prevailed. Although the data obtained at the group level are not as readily interpreted as those for individual measures, they suggested that groups advanced a perspective more characteristic of men than of women as former's group membership increased, a trend that was intensified by an induced psychological set stressing group harmony. It was also observed that males were regarded both by themselves and other group members as wielding more social influence than females, with males' interaction styles coinciding

with those considered indicative of social influence and females' corresponding to a style reflective of a concern with group feelings and group harmony; both styles were but moderately affected by instructional sets in mixed-sex group compositions, with both females and males responding to the psychological set demands. In other words, group members' interaction styles followed traditional lines of women's specializing in socio-emotional and men's in instrumental interaction styles. The questionnaires, group tasks, and group dynamics will now be discussed in greater depth, combining, where relevant, the results obtained from both experiments.

Women, Men, Nuclear-Related Attitudes and Concern

When taken together, women's and men's responses on the *Nuclear Attitudes Questionnaire* (NAQ) corroborated those obtained by Newcomb (1986, 1988); a more pacific, less militaristic, and emotionally more concerning set of attitudes, beliefs, and emotions was conveyed by women as compared to men. The results of the single-item, self-rating of overall concern about nuclear-related issues lend additional support to women's greater concern than men's. Using Newcomb's four-factor scale to describe this difference, women expressed a more intense level of *Nuclear Concern* and *Fear of the Future* whereas men indicated a stronger degree of *Nuclear Denial* and more *Nuclear Support*; the first two factors are thought to reflect increased nuclear anxiety and the last two decreased nuclear anxiety, as well as a belief in nuclear proliferation and nuclear power (Newcomb, 1988). That is, women showed greater concern about nuclear weapons, nuclear power, and the inherent dangers they represent (e.g., nuclear war), in addition to their stronger fears associated with the possibility of nuclear war within ten years and with raising children under the threat of nuclear destruction. Men, on the other hand, were more supportive of nuclear weapons and nuclear power, and also conveyed more denial about nuclear-related dangers, as shown in the belief of being able to survive a nuclear war, a relatively low degree of nuclear-related worry, and a belief that

many people over-react about nuclear war. Newcomb (1988) suggests that women's higher degree of concern, fear, and anxiety about nuclear war may be involved with a greater readiness on their part to become actively engaged in the prevention of war, while men's denial of nuclear anxiety may be connected to their support of nuclear weapons, meaning that different strategies may have to be used to engage men in efforts towards war prevention. It would also seem that the reverse is possible: higher nuclear support may foster a higher degree of nuclear denial.

Overall, women's and men's responses on both the *Nuclear Attitudes Questionnaire* and the single-item, self-rating of nuclear concern lend support to previous research findings on what has been referred to, by Abzug (1984), as the gender gap on peace and environmental issues. These two studies thus join together to support previous research findings of women's offering weak support of nuclear weapons and nuclear power, holding a stronger set of concerns and fears associated with these issues, and showing less denial about the chances of survival in the event of nuclear war (e.g., Boulding, 1984; Brody, 1984; Hamilton, van Mouwerik, Oetting, Beauvais, & Keilin, 1988; Longstreth, Turner, Topliff, & Iams, 1989; Passino & Lounsbury, 1976; Polyson, Stein, & Sholley, 1988; Silverman & Kumka, 1987).

Women and Men on the Nuclear Arms Dilemma Group Problem

The issue of whether the United States should disarm or continue to arm itself as an effort towards peace was raised in terms of both the moral dimension of human survival and its concomitant dilemma, found in the possibility of human suffering and destruction following from either disarmament or armament. In other words, the value conflict between life and security was brought to the fore by turning the question of the best means towards peace into a moral problem. When faced with the *Nuclear Arms Dilemma*, then, students had to determine whether disarmament or armament was the best possible means towards peace and to provide reasons in support of their choices.

Although this research effort is not without precedent in its attempt to distinguish those who prefer disarmament from those who favour armament with nuclear weapons, a concern of innumerable empirical and theoretical inquiries (see, for example, Feshbach, Kandel, & Haist, 1985; Fiske, Pratto, & Pavelchak, 1983; Kimmel, 1985; de Rivera & Laird, 1988; Wagner, 1988; Yankelovich & Doble, 1986), it represents an unique empirical extension of this concern to Gilligan's (1982) care or justice moral orientations. Previous work has outlined possible conceptual links between similar types of schemes and the systems of war versus peace (e.g., de Rivera & Laird, 1988; Staub, 1988), as well as the connection between these two perspectives, in particular, and women's and men's stances on issues of peace and security (e.g., Reardon, 1985). Other researchers have relied on Gilligan's moral orientations of care and justice to explain sex differences on nuclear-related attitudes (e.g., Polyson, Stein, & Sholley, 1988), or to guide workshops on peace (see, for example, Surrey, 1987). However, the ways in which the perspectives of care and justice were aligned with disarmament or armament choices, or with women and men on either of these choices, remained open to empirical review. While many have assumed a relationship between disarmament and a care perspective, and a connection between women, disarmament and a care perspective, it seemed logically possible that care and justice perspectives could be related to either disarmament or armament. It was thus hypothesized that if women were most responsible for bringing the voice of care to social issues and men the voice of justice, then women and men might hold different "versions" of the same stance on nuclear-related issues.

Positions. More women than men chose the position of *Disarmament*, and more men than women endorsed the position of *Armament*; moreover, women chose the position of *Disarmament* more often than *Armament* whereas men's support was almost evenly split between *Disarmament* and *Armament*. Women and

men who supported *Disarmament* were further distinguished by the qualifications they lent to it, with women emphasizing elimination or uni-lateral reduction of nuclear arms and men, while promoting uni-lateral reduction, adding a dimension of control, shown in an emphasis on agreements or arms control (e.g., retention of military strength through nuclear or conventional forces). Qualitative distinctions between women and men, however, were not as evident for *Armament*, with the only possible one suggested by women indicating more frequently than men a uni-lateral maintenance of nuclear weapons with no increases. Although women and men have not always been found to differ on questions about nuclear arms policies (e.g., Feshbach, Kandel, & Haist, 1985), the findings reported here share some compatibility with previous studies noting women's tendency to oppose nuclear arms and to prefer those actions suggestive of an uncoerced, peaceful co-existence (see, for example, Abzug, 1984; Yankelovich & Doble, 1986).

Reasons. The qualitative analysis of students' written reasons for their *Disarmament/Armament* positions yielded two additional components of information, thematic content and moral orientation. While no differences were discerned between women and men in the themes they expressed to support *Disarmament* or *Armament*, the two positions themselves were set apart by the thematic content found in the reasons. Looking first at the two themes presented most often in support of these positions, a concern with the preservation and quality of life (i.e., physical, emotional, psychological), in the present and the future, and with developing co-operative international relations in the interest of peace characterized the majority of reasons for disarmament. Reasons in support of armament were predominated by themes of fear and distrust in international relations and arms control, at current or higher levels, as a means to prevent war. Other themes associated with disarmament reflected social and environmental benefits deriving from the release of military funds, and the incongruity between a

belief in peace and weapons; it is worthwhile to note that women offered most of the reasons found in this last category, calling attention to the need to remove weapons in order to reduce fighting and aggression and to stop the arms competition in order to open the way to peace. The remaining themes for armament included a concern with dominion or power in international relations, the need for arms superiority in order to prevent war (staying in the technology race, at least), and the socio-economic benefits related to the military complex and arms industry.

Going back to those categories capturing the majority of individuals' reasons, it is interesting to note the shared, yet dissimilar concerns raised in connection with both disarmament and armament. For disarmament, fear was associated with a concern over emotional and physical safety and welfare, with the possibility of death and/or destruction being stressed; for armament, fear was also a prominent theme, but here it was related to a distrust in other nations' actions, with the possibility of attack and the inevitability of either war or nuclear weapons technology being emphasized. Furthermore, themes concerned with international relations for disarmament highlighted the need to symbolize trust and the desire for peace through arms reductions, whereas armament reasons conveyed a distrust in other nations' actions, accenting vulnerability to attack and oppression by other countries, thereby drawing a connection between nuclear arms and the prevention of war.

de Rivera and Laird (1988), in their application of MacMurray's (1962) ideas concerning the relationship between action and emotions to the area of foreign policy, propose that given the condition of peoples' love dominating their fear, the terms of foreign policy may shift away from pragmatic ones of power, including military power, to those based on caring for others. While the reasons given in support of disarmament and armament offer some promise to this conceptual framework, they also indicate a more complex relationship. Fear, for example, was

operative in reasons for both positions, with the difference being in the emphasis placed on death and destruction, in the case for disarmament, and distrust, in the case of armament. Care and justice perspectives further elaborate this relationship, the means of which will become apparent in the following discussion.

Care and justice perspectives. Based on earlier research findings (e.g., Bussey & Maughan, 1982; Donenberg & Hoffman, 1988; Ford & Lowery, 1986; Gilligan, 1982; Lyons, 1983), it was hypothesized that women, in their reasons, would be more inclined to articulate a care perspective and men a justice perspective, and that both perspectives would be brought to bear on their choice of either disarmament or armament. This hypothesis was upheld only for the position of disarmament, wherein a care perspective was predominantly manifest in women's reasons and a justice perspective in men's; reasons for the position of armament were expressed from a justice perspective by both women and men.

The most pronounced difference between women and men on moral orientations was observed for the two categories of emotional and physical welfare and international relations, suggesting that moral orientation was not dependent on types of reasons; the only possible exception to this was for the category concerned with social and environmental welfare, for which a care perspective was predominant in reasons by both sexes. It is not necessarily the case that a care perspective would have disappeared without women's contributions, but it would have been substantially weakened given the relative salience of a justice perspective in men's reasons. The reverse also holds, however, in that the justice perspective found in men's reasoning for disarmament would virtually have disappeared had there been a single reliance on women's reasoning. Thus, while a minor portion of men's reasons were from a care perspective and a meager portion of women's were from a justice perspective, a reliance on women or men alone would have resulted in the loss of at least one moral orientation.

It would seem, then, that the initial prediction of different versions of a similar stance gained only partial support. That is, a unitary position of disarmament stemmed from two perspectives: one based on care and the other on justice. For women, the position of disarmament was qualified most often as either the elimination of nuclear weapons or a uni-lateral reduction, and it gained support through a set of reasons articulated from a care perspective. To enlarge upon this, when women vote about their concern over the preservation of life, they identified the possible harm involved to everyone in a language of values associated with shared responsibility, connection, and care. Disarmament, from this perspective, was seen as the means to avoid exploitation and hurt. A care perspective was also used in their reasons concerning international relations, expressing values such as interdependency, attachment, and care. In this way, the moral question of human life and security was transformed into one concerned with how to build and sustain trust in relations between nations.

While men also spoke to the preservation of life and co-operative international relations, their perspective of justice altered the understanding of these concerns, just as their provisos for disarmament entailed a shift away from uni-lateral reductions to multi-lateral agreements and arms control. Preservation of life was now described through contractual obligations, or weighing the military strength of the United States given a reduction in arms, using, at times, standards or principles to justify the retention of some form of strength for self-protection in the event of an attack. Thus, while they also identified the potential harm and destruction associated with nuclear weapons, it was in reference to a need for protection. In a similar fashion, a justice perspective in reasons concerning international relations reflected values of equality, reciprocity, and rights, signified by military strength, arms control agreements amongst nations, and a balancing out of a reduced military capability relative to other nations.

Whereas care and justice perspectives bring two rather distinct understandings to the position of disarmament, a unitary perspective of justice prevailed in reasons for armament. Fear and distrust in international relations and arms control as a means to war prevention predominated the themes presented by women and men in support of armament, and, for both categories and both sexes, the reasons were articulated from a justice perspective. Women's and men's reasons seemed to follow from notions of deterrence or mutually assured destruction, with themes of fear, distrust, protection, control, and the power of a nuclear threat running throughout. When put into their justice perspective, values such as equality and reciprocity came through in a language of balancing claims, standards and principles.

To return to de Rivera and Laird's (1988) thesis about the relationship between policy actions and emotions, the perspectives of care and justice may offer a useful framework for understanding the ways in which love and fear are associated with different actions. Whereas fear was apparent in reasons given for both positions from either perspective, it may be that a care perspective changes the response to fear by recasting the moral question to one of how to maintain human relationships and avoid exploitation and hurt, thus transforming the dilemma into a matter of how best to care for those involved (cf. Gilligan, 1987a). A justice perspective would also shape the response to fear, but this time the question is cast as one of rights, pointing to concerns about human relationships in terms of fairness or standards and principles (e.g., Categorical Imperative or Golden Rule; see Gilligan, 1987a). If this holds, then it may not be simply a matter of love dominating fear, or vice versa, but the perspective within which these emotions are given meaning. That is to say, fear in the context of care may be substantively different from fear in the context of justice. This framework differs from de Rivera and Laird's, wherein the predominance of love for the other is thought to make

cooperation possible and the predominance of fear for the self is associated with selfish pragmatism or submissive idealism.

In summary, women's reasons emphasized a care perspective and men's a justice perspective for the position of disarmament, but not armament. These results suggest not only the possibility of disarmament's being a more complex stance than armament, but also the ways in which the means to disarmament itself may differ. The singular perspective found for armament is also of interest, suggesting a more specific and particularized view than that of disarmament; this finding may be related to the popularization of armament views which themselves were based in classic just-war doctrine, and thus intimately connected with a justice moral orientation (see, for example, Elshtain, 1985; Grassman, 1981).

Small Groups of Women and Men on Nuclear Issues

Given the condition of women's and men's bringing different sets of concerns and/or a different moral orientation to nuclear-related issues, the question of social influence was introduced to address whose concerns or whose moral orientation would be heard in the context of small groups. In the first study, small groups of mixed-sex and same-sex group members were asked to complete a rating of their groups' overall degree of nuclear concern. It was hypothesized that the degree of concern would decrease as the number of male group members increased. This hypothesis, in general, was not upheld; ratings only decreased slightly, but not significantly, and, moreover, the mean rating for male majority groups exceeded that of all other groups. On the basis of the concern ratings, it was unclear whose voice predominated, despite the indications of men wielding more social influence in group interactions than women.

In the interest of conveying the meaningfulness and realism of the *Nuclear Arms Dilemma* as a group task, it is, perhaps, appropriate to remark that students became very involved in the group discussion. Their admissions of a reluctance to

change their personal positions, during the group discussions, coupled with their comments made after the experiment offer testimonial support to the sincerity of their contributions. In post-experimental discussions with the students, they often mentioned that they found the experience meaningful or illuminating for them personally, and many further disclosed that they had not previously shared their own thoughts and feelings on this issue with their peers, a matter of some interest in itself.

The hypotheses for group responses to the *Nuclear Arms Dilemma* were somewhat more involved. The general hypothesis was that the position of the group would shift to armament and the moral orientation to justice when the number of men relative to women increased. This general trend was expected to be enhanced for groups receiving the relational set, wherein a stronger request for conformity in the interest of group unity was expected to encourage women to yield more to social influence pressures, as compared to the informational set, wherein an equal demand to be task-orientated was placed on all group members. The set inductions were determined to be equally well interpreted, based on pre- and post-experimental questionnaires, with their translation to perceived and behavioural levels of group dynamics suggesting differential effects.

Group positions. Choices of disarmament were observed to decrease while choices of armament increased as the number of men relative to women increased in mixed-sex group compositions, providing a measure of support to the general hypothesis on group positions. Although this tendency was found for groups in both instructional sets, it was more pronounced for groups in the relational set. The stronger effect noticed for group compositions in the relational set was thought to be brought about by the stronger representation of armament by men in this condition as compared to the informational set; the representation of women's choices was relatively equivalent between informational and relational sets. While

the move away from disarmament to armament may be simply a function of more men holding the position of armament, this also indirectly suggests more influence by men in the choice of group position. Across both instructional sets, groups composed of all women or a woman majority were close to unanimity in their choice of disarmament over armament options. Thereafter, group compositions indicated more inconsistency between instructional sets, revealing, as mentioned, a slight tendency towards armament as the number of male group members increased.

By taking into account the provisos given to the position of disarmament by groups, another dimension of men's possible influence over groups' choices was detected. As the composition of the groups included more men relative to women, the qualifications moved away from elimination and uni-lateral reduction to include multi-lateral reduction and arms control; this pattern, while faint, held for both instructional sets. No trend, as such, was observed for provisos of armament in either the informational or relational set; almost all of the groups qualified this position as one of uni-lateral maintenance of nuclear weapons.

Group reasons. Contrary to the results for individuals, a change in the emphasis on certain themes was noticed amongst the group compositions in their reasons for disarmament. In general, groups composed of all women, a majority of women, and balanced numbers of women and men stressed concerns related to emotional and physical welfare whereas groups of all men and a majority of men emphasized themes related to international relations. A pattern amongst group compositions in their themes for armament was virtually undetectable, with most of the groups presenting themes concerned with fear and distrust in international relations, the use of arms as a means to prevent war, and the socio-economic benefits deriving from the military system.

Care and justice perspectives. The perspective of care was once more found only in reasons for disarmament: a justice perspective was present in reasons for both disarmament and armament. As hypothesized, a perspective of care in reasons for disarmament gave way to one of justice with a change in the group composition from all or majority women groups to majority and all men groups, and this trend was enhanced somewhat under the relational as compared to the informational set. Whereas the voice of care is relatively prevalent for all women, majority women, and balanced groups under the informational set, a noticeable attenuation in a care perspective with a coincident accentuation of a justice perspective occurs for majority women and balanced groups under the relational set. Given the results obtained at the individual level for women and men, this trend, albeit rather weak, suggests nevertheless that men were more influential under the relational set as compared to the informational set. Reasons in support of the position of armament revealed a predominant justice perspective, regardless of group composition or psychological set.

When taken together, provisos of elimination and uni-lateral reduction for disarmament were displaced by those of multi-lateral reduction and arms control when the number of men in the groups increased. While one might expect the perspectives to alter with a change in group composition, the voice of care yielded notably to one of justice with the increasing presence of men in the relational set groups. The greater frequency of an armament position coupled with an increased emphasis on a justice perspective for disarmament reasons for mixed-sex groups was thought to indicate more influence by males than females in the group task under the relational set.

While not a systematic analysis, the transcripts of the group discussions provided the opportunity to review students' understandings of the two positions and the context within which were discussed various reasons or information. One of the

more frequent distinctions made between the two positions was in disarmament representing a moral stance and armament a realistic one; a second common contrast was in disarmament symbolizing a position of hope and armament a lack of hope in its seeming one-way path to destruction. The pre-eminent context for group discussions was that of international relations, even when students were deliberating on the matter of weapons capability and technology, which was also evident in written reasons, although to a lesser extent. This observation is noted here because a loss of the broader context results when reasons are categorized, and because it is important to note the contextual basis of students' concerns on this social issue, which are often made invisible by a reliance on attitude questionnaires.

In summary, group resolutions to the *Nuclear Arms Dilemma* demonstrated, in part, how social influence processes between social groups may be involved in the choice of disarmament or armament and the promotion of a set of beliefs. It also reveals how the voices of care and justice, as carried forward by social groups, do not surrender readily to integration, displaying instead the potential effect of group composition and social influence processes in the advancement of one perspective over the other.

Small Groups, Social Influence, and Psychological Sets

Observations of groups during the first experiment provided information about the types of interactions performed by women and men in mixed-sex and same-sex group compositions when no psychological set was induced. Based on students' nominations of group members' interactive styles, women and men in mixed-sex group compositions were perceived as specializing in socio-emotional and instrumental activities, respectively, with some indication of more variation in men's styles than women's. While men initiated little more communication than women, they received noticeably more communications than women. Nominations for talkativeness and best ideas combined with observations of received

communications suggested that men exerted more social influence than women, whose interactive styles were not so characterized; these interaction patterns appeared to be most clearly differentiated in minority-majority group compositions. While acknowledging that comparisons between studies of small group interactions between women and men are made increasingly difficult by variations in group size, sex ratios, type of task, and group history, the present results, nevertheless, offer a degree of support to the history of research demonstrating women's and men's specializing in certain interaction styles (e.g., Aries, 1982; Strodbeck & Mann; 1956), the relationship between styles typically assumed by men and those associated with greater social influence (e.g., Bales, 1950, 1951; Bavelas, Hastorf, Gross, Kite, 1965; Carter, 1954;), and the increased variability in men's interaction style in the situation of mixed-sex group compositions (e.g., Aries, 1976). Moreover, results from this first experiment lend themselves to the validity of the group psychological set inductions used in the second experiment.

The two psychological set inductions, relational and informational, were modelled after Thibaut and Strickland's (1956) *group* and *task* sets, respectively, for which social influence processes were demonstrably stronger under *group* as compared to *task* conditions. On the joint basis of Thibaut and Strickland's research and that of Deutsch and Gerard (1955), the relational set was expected to induce stronger demands to yield to the social influence exerted by others than the informational set. While both women and men were expected to behave in a style more characteristic of socio-emotional behaviours than instrumental ones under the relational set, the anticipation was that women, who have been regarded traditionally as enacting the expressive role, would increase their already higher degree of socio-emotional behaviours and thus yield more to the influence attempts of men. Under the informational set, women were expected to increase their

instrumental-like communications and, hence, to be more influential and less influenced.

Group set inductions were, in this way, related to the predictions about group interactions, as well as to group positions and group moral orientation on the *Nuclear Arms Dilemma*, as discussed earlier; partial support was shown in the stronger representation of both an armament position and a justice perspective for disarmament under the relational set. Predictors of sex group membership under the informational or relational set suggested that the sets affected group members' perceptions of themselves and others in accord with the demands. Talkativeness did not contribute to the prediction of sex group membership under the informational set whereas it was effective under the relational set: socio-emotional behaviours, in like fashion, were predictive under the informational but not the relational set. In other words, the sets affected perceptions of both women's and men's interaction styles. Taken together, the indices predictive of social influence (talkativeness, task-directedness, best ideas) were also those related to higher rankings for men, with the difference between the two sets found in the greater number of these indices being predictive of male group membership under the relational as compared to the informational set.

Tests of differences between group compositions and group sets provided less support to the discrimination between women and men on attributed interaction styles. Although rankings of men's talkativeness were generally higher than women's, a significant difference between them was specific to balanced group compositions under the relational set. Similarly, rankings of socio-emotional behaviours were more often higher for women, but a significant difference was only obtained for the majority women groups; moreover, men's rankings on this index were affected by different group compositions while women's remained relatively

stable. However, men were consistently regarded as having the best ideas, across all mixed-sex group compositions and both group sets.

The Balesian analysis of group interactions, in contrast to group members' perceptions, did not reveal differences between group sets for women and men in mixed-sex group compositions. Instead, women's styles featured socio-emotional and men's instrumental, or task, interactions; women also evinced more interactions concerned with asking questions than men. When women's and men's types of interactions were compared at the group level, however, women differed from men in their socio-emotional contributions only for groups composed of a majority of women, while no differences emerged for instrumental or attempted question types of interactions. Thus, it would seem that women's and men's individual styles followed traditional sex-role distinctions in their respective emphases on socio-emotional and instrumental interaction styles.

Unlike mixed-sex group results, the set inductions affected socio-emotional interactions for groups of all women and all men. While both groups increased their socio-emotional contributions under the relational as compared to the informational set, all women groups' exceeded all men groups', and this held for both the individual and the group level. Instrumental behaviours were not altered by group sets, with all men groups performing more of this type of interaction than all women groups. Groups were thus distinguished by a specialization in interaction styles, as found by other researchers (e.g., Aries, 1976), with the relational set serving to enhance socio-emotional interactions.

Considered together, these results suggest that while group set inductions may have affected the way in which group members perceived themselves and others in mixed-sex groups, they may not have functioned to alter the interaction styles emphasized by women and men. In contrast, the relational set on same-sex groups' socio-emotional interactions provides partial support for the effect of group

sets on behaviour. Despite the finding that psychological set inductions did not translate consistently into interaction styles as predicted, a conclusion concerning their ineffectiveness would also be unwarranted. Instead, these results may reflect a failure to take into account variations in psychological sets mediated by the effects of mixed-sex group compositions on influence or interaction styles (see, for example, Aries, 1983; Carli, 1989; Reitan & Shaw, 1964), the influence of sex-related status differentials (e.g., Berger, Cohen, & Zelditch, 1972; Meeker & Weitzel-O'Neill, 1977; Ridgeway, 1981), the structure of the task (see, for example, Kaplan & Miller, 1987), or what Turner (1987) calls referent informational influence (i.e., stereotypical attributes of ingroup categories). Alternatively, the importance of the issue itself and the degree to which students became involved in the group discussion may simply have overridden the set manipulations. Regardless of which possibility is called upon to qualify the effects of the psychological sets, in the end one may still be left with the matter of group dynamics being modelled on males (see, for example, Jenkins & Kramer, 1977). One consequence of this lies in what may amount to a misdirected attempt to fit female group dynamics into a male-derived model.

When looked at within the framework of social influence, however, a rather coherent picture emerges for the present findings. Men's interactions were characterized by those styles assumed to be related to greater social influence than women's: moreover, men both regarded themselves and were seen by other group members as having more social influence over the group position and group reasons. While this may be related to perceptions concerning men's higher social status, it is also possible that the issue itself was viewed as a matter falling within the purview of men (i.e., men were expected to be better informed), thus amplifying their overall

social influence, regardless of their numerical representation in groups (e.g., Berger et al., 1972; Feldman-Summers, Montano, Kasprzyk & Wagner, 1980; Sistrunk & McDavid, 1971; Goldberg, 1975; Ott, 1989).

Summary and Comments

Viewed from one angle, the findings of this dissertation research speak to the historically debated question of whether women and men bring with them distinct perspectives on the social issue of peace and security: from another, perhaps more narrowly focussed, angle, they relate to the social psychological study of social influence processes in the promotion of one set of distinctions over the other. With regard to nuclear-related attitudes and concerns, in general, it could be said that few, if any, new features were added to the traditional socio-cultural mosaic in which women have been depicted as more pacific, men more militaristic. To this familiar characterization, however, were brought at least two new dimensions: one of understanding, shown in the reasoning underlying women's and men's perspectives, and one of social psychological processes.

What was of import here was thus less a matter of discerning whether women and men were proponents or opponents of disarmament or armament, and more of one concerned with how they may hold different *versions* of either stance. In this regard, both the introduction of the nuclear arms issue as a moral dilemma and Gilligan's care and justice perspectives as an interpretative framework proved valuable. As discussed earlier, care and justice perspectives were lent to disarmament by women and men, respectively, while only a perspective of justice was related to armament; men thus emphasized the same perspective, justice, to convey their support of either position whereas women stressed a care perspective with respect to disarmament and one of justice in relation to armament.

Both the dual perspectives on disarmament and the unified one on armament are of interest, suggesting not only a composite structure of

representations for disarmament as compared to armament, but also how different sets of values may be shown in disarmament as a means towards peace while a more coherent set evinces for armament. In this sense, these findings depart from earlier views of different values guiding preferences for different policy actions, indicating instead the possibility that different values may serve to transform the interpretation of similar means, such as disarmament. With respect to the present results, it would seem that a similar set of values was associated with either position for men, whereas women's perspectives suggested different values for different stances.

Although few social psychological studies of small groups and social influence have attended to the thematic content, or set of beliefs, produced by groups, placing more of an emphasis on group dynamics, this approach would seem to have its own merits. By varying the social influence demands through the use of group sets and by varying the composition of women and men in the groups, it was possible to examine the relationship between social groups and social influence in the production of a set of beliefs. While both care and justice perspectives were evident in groups' reasons for disarmament, the perspective of care gave way to justice as the membership of the group shifted from a majority of women to majority of men; and, moreover, the voice of care yielded more to that of justice when social influence demands were enhanced. While the debate about women's participation in formal, peace organizations usually centers on whether they would bring anything new or different to these groups, this research suggests that a more pertinent question may be one involving how their degree of social representation and social influence within formal organizations may affect the extent to which their perspectives are heard.

In closing, one may well ask what this research implies for the social psychological study of social issues in small groups. At least two considerations are thought relevant, both of which were addressed, over forty years ago, by Kurt Lewin

in his view of the future of small group research in social psychology. In his words, "we are, I think, well on the way to measuring even such dynamic properties as the degree of group tension, the degree of cohesiveness, and, of course, its ideology" (1943-44/1952, p.162). While social psychologists, in the decades since, have paid more favour to the study of group dynamics than ideology, it would seem that their interest in either has waned considerably (cf. Steiner, 1986; Billig, Condor, Edwards, Gane, Middleton, & Radley, 1988). In the interest of re-visioning the social facets of social psychology, then, it would seem that study of both social groups *and* social content, or ideologies, offers promise. This may entail a contextual appreciation of social issues, such as the study of peace within the context of international relations, as well as a reformulation of classic studies of group dynamics.

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**Appendix A: Instructions and the Nuclear
Attitudes Questionnaire**

This is a study about issues surrounding the nuclear arms debate; in this study, we are asking groups of students to tell us about their attitudes toward various nuclear issues. In a few minutes, we will ask each one of you to complete a questionnaire consisting of 15 statements about nuclear related issues. Following your completion of this questionnaire, you will be asked to complete two additional ratings: One rating you will do on your own, and the second rating you will complete as a group, for which your group will be given time for group discussion.

Please turn to the next page for your instructions about completing the Nuclear Attitudes Questionnaire.

We are interested in whether you personally agree or disagree with a variety of nuclear-related concerns. Below is a list of fifteen statements related to a variety of nuclear issues. Your task is to read each statement carefully and then to rate each statement by marking an 'X' on the 5-point scale that ranges from **STRONGLY DISAGREE (-2)** to **STRONGLY AGREE (2)**. You will have twenty minutes to complete the questionnaire. For example: If you strongly agree with the statement, you would mark an 'X' on the line above the number 2 to show that you "strongly agree".

1. Nuclear power plants are a safe means of energy production.

2. I am quite concerned about how many countries have nuclear weapons.

3. I would feel frightened if I lived within ten miles of nuclear power plant.

4. It is essential for our protection that Canada have a strong nuclear force.

5. Nuclear power plants are an efficient (cost effective) energy source.

6. I imagine there will be a nuclear war in the next 10 years.

7. There is a strong link between nuclear power plants and nuclear weapons.

8. It is a good idea for Canada to supply other countries with nuclear power plants.

9. I feel frightened when I think of all the nuclear weapons in the world.

10. I imagine I would survive a nuclear war.

11. I have never really worried about nuclear war.

12. Many people tend to overreact about the threat of nuclear war.

13. There are times I have felt depressed thinking about the possibility of nuclear war.

14. The world feels like a very dangerous place because of so many nuclear weapons.

15. I have no hesitancy about raising a child with the threat of nuclear war.

After you have rated each statement, turn to the next page.

**Appendix B: Individual and Group
Self-Rating Measures**

All in all, if I were to estimate my own degree of concern over nuclear issues, I would say I was:

Not At All Concerned

**Extremely
Concerned**

Please turn to the next page.

It is now time for your group to rate its degree of concern over nuclear issues. Read the statement below, and then determine, as a group, which place on the line would best represent your group's degree of nuclear concern. You will be allowed 30 minutes to come to a group rating; use your time to discuss where your group should place its 'X'. Remember that your group's rating should reflect your group's degree of nuclear concern.

All in all, if our group were to estimate, acting as a group, our degree of concern over nuclear issues, we would say it was:

	-	-	-	-		-	-	-	-		-	-	-	-		-	-	-	-	
Not At										Extremely										
All Concerned										Concerned										

**Appendix C: Questionnaire for Rankings of
Group Interactions**

We are interested in how you see your own and other group members' participation during the discussion. Below are four questions asking you to name two of the four group members whose participation during the group discussion fits with those behaviours described in the question. Each question is accompanied by two blank lines: Use the first blank line to write the name of the group member whom you would rank as first and the second blank line to write the name of the group member whom you would rank as second. Remember to include yourself as one of the four possible choices.

1. Who talked the most?

Group member ranked first: _____

Group member ranked second: _____

2. Who was the most concerned about determining the group's rating, including giving opinions and ideas, evaluations of other's contributions, and analysing the group's degree of concern?

Group member ranked first: _____

Group member ranked second: _____

3. Who was the most concerned about group feelings, including friendly comments, enthusiasm for other's comments, attempts to encourage harmony, and offers to help and to share in the group task?

Group member ranked first: _____

Group member ranked second: _____

4. Who had the best ideas?

Group member ranked first: _____

Group member ranked second: _____

**Appendix D: General Information Sheet,
Consent Form, and
Audio-Tape Recording Permission Form**

NAME: _____
AGE: _____
SEX: _____
AREA OF STUDY: _____
RELIGION: _____

Have you ever participated in any organization(s) concerned with peace? YES NO

Which organization(s)? _____

Do you belong to an organization now that is concerned with peace? YES NO

Which organization(s)? _____

Informed Consent Form

I, _____, agree to participate in a study concerned with students' attitudes toward various nuclear-related issues that is being conducted by Betty Bayer under the supervision of Dr. L. Strickland. The procedure of the experiment has been fully explained to me, and I understand that I may withdraw from the experiment at any time. It is also understood that my identity and my responses will be kept confidential.

NAME (PRINT): _____

SIGNATURE: _____

DATE: _____

WITNESS: _____

DATE: _____

Permission to Audio-tape

I, _____, grant my permission to audio-tape the experimental session, with the understanding that the tapes will be used for experimental purposes only.

NAME (PRINT): _____

SIGNATURE: _____

DATE: _____

Appendix E: Content Analysis Guidelines

Content Analysis Guidelines

A first reading and content analysis of both individual and group reasons were undertaken with an effort towards classifying the reasons into specific categories. A total of 25 rather specific categories were identified for position number one (U.S. should drastically reduce), and 21 categories for position number two (U.S. should maintain or increase). The categories were then sorted according to themes, resulting in four broad-based categories for *Disarmament* and five for *Armament*. A second reading and content analysis was then performed to categorize the reasons according to theme and to classify the reasons within each category as instances of a care or justice orientation.

The coding of a care or justice orientation was given direction by Gilligan et al.'s (1987b) *A Guide to Reading Narratives of Moral Conflict and Choice for Self and Moral Voice*. While both orientations were covered in the introduction, they will be summarily reviewed here as a guide to the content analysis procedures. Each reason was read to determine what was being emphasized and what was the organizing frame. Key words or phrases were not in and of themselves taken as evidence of a particular orientation; rather, their meaning was derived from within the context of the reason as it was articulated by the student(s). Briefly, a care orientation was recorded if the reason expressed relationships in terms of attachment or detachment, spoke to building or sustaining trust over time, placed a value emphasis on maintaining connection, avoiding exploitation or hurt, and stressed a shared responsibility for safety and welfare (pp. 4, 94). In contrast a justice orientation was reported if the relationship was characterized in terms of inequality/equality or reciprocity, linked vulnerability with oppression, placed an emphasis on issues of fairness, individual rights, standards or principles

(e.g., Categorical Imperative or Golden Rule), assumed the need for some external structure of connection, and drew attention to weighing, balancing, or equalizing claims, contractual obligations, or fair exchange for mutual benefit (pp. 4, 108).

In this way, each reason was categorized first by its theme and secondly by its use of a care or justice orientation; reasons that were not clearly identified as either care or justice were recorded as "other". The breakdown of categories of care and justice moral voices are provided below for both *Disarmament* and *Armament*, accompanied by examples from students' reasons.

Disarmament (Position One)

1. Emotional/Physical Welfare. From the initial reading, eight categories were observed to share this concern with the preservation of life in all forms and with human emotional well-being: arrest the inevitability of death/destruction associated with nuclear weapons; reduce the risk of accidents, accidental war, or failed deterrence; weaken feelings of fear and insecurity or strengthen feelings of safety; remove/weaken threat of death or war; no win/lose-lose situation; alter capability to blow up the world many times over; fear for safety of future generations; and reduce lethal consequences of government decisions in times of war. For example:

Too much of the world's time, energy and fear is spent on nuclear weapons. No one needs to live in constant fear of destruction, it would be a great relief if we could live with one less (evil) concern. (And a much happy, relaxed, secure world to live in.) (care)

The Americans should still feel safe even if they reduced their nuclear arms 85%, they would still have enough to destroy the U.S.S.R. (justice)

Decrease the number of weapons in order to decrease the probability of error or misuse. (other)

2. International Relations. This category is comprised of those statements that point to relations between nations or to characterizations of relationships, and

was developed on the basis of a theme felt to be common to five of the categories coded initially: taking the first step by showing other countries a desire for peace or setting an example for others to follow; U.S. a powerful nation regardless of nuclear capability; promote peaceful co-existence; alter need for power; and, symbolizing trust. For example:

If the U.S.A. drastically reduces arsenals of nuclear weapons the Russians may feel less threatened and reduce their arms supply making the power for global annihilation (sic) greatly (sic) reduced on both political sides. (care)

Agreement must be met between U.S. and other countries in order to ensure mutual disarmament. The U.S. decreasing their arsenal would send a message to all countries that peace, not domination, is what the U.S. wants. This move would tend to decrease tensions and in turn increase communication between the countries without having an adverse effect on their ability to protect themselves because of the abundance of arms they now contain. (justice)

By reducing nuclear weapons it might encourage other countries to do the same. (other)

3. Social/Environmental Welfare. This category deals largely with the economics of reducing nuclear weapons, with many of the different reasons suggesting the diversion of funds away from nuclear weapons and towards other social issues, human benefits, or environmental concerns: enable funds to be channeled towards, for example, the homeless, third world problems, peace education, or benefits for society; secure world for future generations; deal with environmental problems; or encourage hope. For example:

The money which is spent on nuclear arms could be better spent on social assistance programs, for example feeding and sheltering the homeless...educating people to the threats of nuclear war...and so on... (care)

It will strengthen the world economy by adding the money supply gained from less spending on nuclear arms. U.S. deficit will probably go down and Canada will benefit because it won't go and purchase any more arms. (justice)

The amount of money being spent on nuclear weaponry could well be spent in many other areas --- more important and beneficial areas. (other)

4. Pacific Beliefs and Actions. Reasons recorded under this heading spoke to a connection between belief and actions outside of the context of preservation of life, international relations, or socio-economic concerns. Four categories were found to fit with this theme: arms are completely incompatible with a belief in peace; reduction is the first step away from war; remove weapons, remove fighting and aggression; and, stop the arms competition and peace will have a chance. For example:

Peace may be achieved in other ways not involving any kind of weapons. It doesn't make sense that large amounts of nuclear weapons in 2 or more countries will establish peace. Peace should not involve any kind of weapons. Peace should be achieved through other means that do not even RISK the chances of a nuclear war. (care)

It has been proven many times over that war settles little. Why should we support a policy that means to inevitably start a war. A war that, this time there will definitely be no winner. (justice)

Would force the U.S. to think of a much more passive route to peace. (other)

Armament (Position Two)

The twenty-one more specific categories were not as easily collapsed into a manageable number of broad-based categories because almost all of them presented seemed to represent variations of the ideas underlying, for example, deterrence or *Mutual Assured Destruction* (MAD). In this sense, the reasons seemed to follow a somewhat narrower line of thinking with concerns of fear, distrust, prevention of war, protection, control, power, and threat running throughout the variations of a general deterrence theme. The five broad-based categories

presented below were thus developed by taking into account the emphasis placed on different themes, as the following examples will elucidate.

1. Fear/Distrust in International Relations. The overall theme in this category was concerned with the actions of others (i.e., nations), shown in a lack of trust in what other countries may do (e.g., reduce or increase) or in an expression of fear about what they might do (e.g., attack). Other reasons included here pertained to being vulnerable to attack or control or oppression from without, a belief that nuclear technology can never be eradicated (i.e., nuclear arms can always be rebuilt by someone somewhere), or that disarming is neither safe nor realistic. For example:

There is no guarantee that other countries would actually decrease their arsenal. It's naive to think that a country would trust an opposing country enough to dispose of many of its weapons, its main protection. (justice)

If the U.S. does not keep in the nuclear arms races other countries would anyways. (other)

2. Dominion/Power in International Relations. Students' reasons coded under this heading emphasized the need for the U.S. to continue to hold a position of leadership or superiority in the world, and were expressed in their reasons as follows: nuclear weapons are symbolic of strength and power, which serves to keep others from becoming superior; nuclear weapons keep the power competition going; nuclear weapons foster a perception of being strong or a leader as opposed to one of being weak or a follower; U.S. has a responsibility to the world to be as strong as possible; and military strength is a requirement of leadership. For example:

With the ideologies of other major powers such as Russia and China (Commies) it is important that U.S. always has that "threat" of nuclear weapons to make sure that our ideologies in North America are preserved. These other countries would be quite willing to control U.S. if we let them see there was no threat of consequence. Right now, for Canada's sake, U.S. is a very strong ally and neighbor, for that matter, to have. Unfortunately U.S. power economically has wilted so in order

to continue as a "power" they must continue to be militarily strong. (justice)

I think that the U.S.A. should maintain its nuclear weapons because I feel that a lot of countries are listening to the U.S.A. because of its power. (other)

The next two categories differ mostly in degree. Both categories are concerned with the prevention of war and with protection or security through nuclear arms and the threat of destruction they represent, with one of the categories reflecting these themes through the idea of a balance of arms or arms regulation internationally (at current levels, higher levels, or reduced levels) while the other one points to military superiority (increasing nuclear arms and/or nuclear arms technology) in the service of similar functions. To have coded these reasons according to the ideas of war prevention or protection would have meant a loss of information about a mutual balance of arms versus an exclusive superiority in nuclear arms.

3. Arms Control and War Prevention. Many of the reasons found in this category presented some variant of the idea of deterrence through nuclear arms, with many of the reasons noting that a balance of arms deters, equal threats of destruction deter, an agreed upon and limited number of arms will continue to deter war by posing an equal threat to all involved, fear of destruction disciplines others, or, simply, deterrence works. Others framed these ideas within their belief that with or without nuclear weapons the threat of war remains, as does the inevitability of the act of war (e.g., human nature), or that the human race has always been a warring one and that nuclear weapons constrain the event of conventional war, or that nuclear weapons are a means of protection and/or defence given the event of war. If mentioned, the idea of peace was related to the absence of war. For example:

Because if there is a drastic reduction it would end the deterrence and the Communist's (sic) countries' major

advantage in conventional weapons would be overwhelming.
(justice)

We need some form of protection. (other)

4. Military Superiority and War Prevention. As mentioned, this category overlaps with the preceding one in its motivation to avert war and provide protection, but the means shifts to terms of superior strength in either nuclear arms or nuclear technology; or, simply, staying ahead in the arms race. While the idea of dominion or power may seem related to this category, this category differs in its emphasis on weapons. For example:

The weapons will help a country feel secure by not falling behind in the "race", and may deter other countries from using these weapons as any forms of retaliation --- due to the threat of the power behind other nuclear weapons which can be imposed upon themselves. (justice)

By maintaining or increasing its arsenal, the U.S. will help in achieving world peace because I don't think gov'ts are dumb enough to destroy the whole world. (other)

5. Socio-Economic Concerns. This category represents a set of reasons pointing to the socio-economic gains from either maintaining or increasing nuclear weapons, with an emphasis on the former leading to suggestions of cost-effectiveness or the diversion of excess funds to other social programs and the latter to nuclear-related employment or to economic gains related to U.S./U.S.S.R. arms competition. For example:

An increase in arms for peace would be a vast waste of money for the country supporting the program. Billions of dollars which could have been used for hunger, medicine, even foreign investment (sic) to create more open markets and thus make new friendships. (care)

Plus, the military and its arms issue do more for the standard of living as we know it. (military activities are source of over 8% of economic activity world wide.) Adding to the arms build up, will maintain this standard. Since I feel that nothing

anybody can do will ever abolish the threat of nuclear activity.
(justice)

It would not be as costly to maintain the nuclear weapons that
are already existent. (other)

As evidenced in the above examples, no care reasons were found for the first four categories. Lastly, it should be mentioned that six of the written responses were not recorded because they appeared to be more comments or statements of opinion. These include: problem of where to put the discarded materials if disarmed; reduction little productivity so far; world would be safer without; maintaining would be an example to the world; would have to reduce to about 10% to avoid world destruction; and, the thought of using all weapons is ridiculous.

**Appendix F: Post-Experimental Ratings
of Social Influence**

We are interested in how much influence you feel you had over the group's decisions and in how much influence you feel the other members had over the group's decisions. Below are four rating scales, ranging from 1 (No influence at all) to 7 (Great deal of influence), for you to use to rate the degree of influence you think was held by each group member, including yourself. The first scale asks that you rate your own degree of influence over the group decisions: Think back to your group discussion to help you to determine your degree of influence, and then circle the number on the scale that best represents it.

Overall, I feel that the degree of influence I had over the final decision was:

	----		----		----		----		----		----	
1		2		3		4		5		6		7
No Influence At All						Great Deal of Influence						

Now turn to the next page to rate the other group members.

Use the remaining three scales below to rate the other group members. For each one, print the group member's name in the space provided, and then complete your rating based on the degree of influence you feel each member had over the group decision.

Name: _____

Name: _____

Name: _____

Appendix G: Questionnaire for Instructional Sets

In a few minutes you will be listening to a set of instructions played to you via an audio-tape recording. These instructions have been written for some research on groups and group discussions. Your task is to listen to the instructions to try to understand what they ask of the group members. You may find it helpful to imagine that you are one of the group members who will be participating later in a group discussion; the instructions are your guide to tell you what will be expected of you and how you might participate in the group discussion. Listen to the instructions carefully for after you have heard them you will be asked to answer a series of questions about your interpretation of the instructions.

Below is a list of statements concerning the instructions that you have just heard. Read each pair of statements (A and B) and then choose the statement that best fits with your interpretation of the instructions. Circle either A or B to indicate which statement best conveys your understanding of the instructions.

Circle A or B:

1. A. I think that the instructions are asking me to accept what each person contributes as being information worthy of consideration.
 B. I think that the instructions are asking me to accept how each person relates to the group as being worthy of consideration.
2. A. I think that the instructions suggest that the relations among group members are the most important task for the group.
 B. I think that the instructions suggest that the use of group members' information is the most important task for the group.
3. A. I think that the instructions ask me to behave in a more rational-like fashion.
 B. I think that the instructions ask me to behave in a more expressive-like fashion.
4. A. I think that the instructions tell me to concentrate on what the group has to say instead of on how we get along.
 B. I think that the instructions tell me to concentrate on how we get along as a group instead of on what we have to say.
5. A. I think that the instructions tell me that my relation to the group is of more importance than the information that I may have to contribute.
 B. I think that the instructions tell me that the information that I may have to contribute is of more importance than my relation to the group.

- 6. A. I think that the instructions tell me that how I feel about other group members and how they feel about me is more important than what I or they may have to say.**
 - B. I think that the instructions tell me that what I or other group members have to say is more important than how I feel about them and how they feel about me.**
- 7. A. I think that the instructions tell us to focus on group harmony.**
 - B. I think that the instructions tell us to focus on group thinking.**
- 8. A. The instructions bring to mind the old saying that "the best defence is a good offence".**
 - B. The instructions bring to mind the old saying that "the best front is a united front".**
- 9. A. I think that the instructions tell me it is important to be accepted by the group.**
 - B. I think that the instructions tell me it is important to present my opinion to the group.**
- 10. A. I think that the instructions tell me it is most important to work at making each member feel that they belong to the group.**
 - B. I think that the instructions tell me it is most important to work at what the group has to say.**

Appendix H: Informational and Relational Sets

Informational Set

It is now time for your group to discuss the issue. Remember that the task for your group is to consider all the available information so you can present a well-informed position at the forum. To start your discussion, each group member will present her or his view to the others. This will involve stating both your position and your reasons supporting it: It will also involve listening to each other's contributions. You may find it helpful to think of your group as an information resource that you can use to clarify your group's position and your supportive argument. Please try to listen to each other carefully because this is your opportunity to gain the information that you will need for your presentation at the forum. Remember that good use of the information will strengthen their view of your Canadian stance.

After each group member has presented her or his view, your group will then discuss the information at hand. Again, this is your opportunity to review the information before you come to a group decision. This is also your time to organize the information that you will use to support your position.

When your discussion time is over, your group will be asked to indicate its position and to write down the reasons supporting this position. You will find the group response sheet in the center of the table.

Relational Set

It is important for us to know before we start just how harmonious your group can be, that is, just what your first impressions of one another are. So although you may not know one another very well, we'd like you to fill out the following four sheets about your impressions of one another. On the first sheet you will see a list of 15 adjectives. You are to rank the adjectives in the order that you think they are attractive when used to describe a person. We will then ask each of you in turn to read out the adjectives in the order you ranked them to the group while the other three members of the group check two adjectives that they think describe their impression of you.

Now please turn to the next page and order the adjectives by assigning the number 1 to the adjective that you find most attractive, 2 to the next adjective and so on to the number 15 which you will assign to the adjective that you find least attractive. The remaining three pages are for you to use to describe your impressions of one another.

Below is a list of 15 adjectives for you to rank order according to how attractive you think they are when used to describe a person. Assign the number 1 to the adjective that you find most attractive, 2 to the next attractive adjective, and so on to the number 15 which you will assign to the adjective that you find least attractive.

FRIENDLY..... _____

AGGRESSIVE..... _____

COOPERATIVE..... _____

ANTI-SOCIAL..... _____

INDEPENDENT..... _____

WARM..... _____

INTOLERANT..... _____

MODEST..... _____

ARGUMENTATIVE..... _____

SINCERE _____

CONCEITED..... _____

SELF-ASSURED..... _____

TIMID _____

SUBMISSIVE _____

SYMPATHETIC..... _____

RATER: _____

GROUP MEMBER RATED: _____

Check two of the adjectives from the list below that best describe your impression of this group member.

FRIENDLY..... _____

AGGRESSIVE..... _____

COOPERATIVE..... _____

ANTI-SOCIAL..... _____

INDEPENDENT..... _____

WARM..... _____

INTOLERANT..... _____

MODEST..... _____

ARGUMENTATIVE..... _____

SINCERE _____

CONCEITED..... _____

SELF-ASSURED _____

TIMID _____

SUBMISSIVE _____

SYMPATHETIC..... _____

RATER: _____

GROUP MEMBER RATED: _____

Check two of the adjectives from the list below that best describe your impression of this group member.

FRIENDLY..... _____

AGGRESSIVE..... _____

COOPERATIVE..... _____

ANTI-SOCIAL..... _____

INDEPENDENT..... _____

WARM..... _____

INTOLERANT..... _____

MODEST..... _____

ARGUMENTATIVE..... _____

SINCERE _____

CONCEITED..... _____

SELF-ASSURED..... _____

TIMID _____

SUBMISSIVE _____

SYMPATHETIC..... _____

RATER: _____

GROUP MEMBER RATED: _____

Check two of the adjectives from the list below that best describe your impression of this group member.

FRIENDLY..... _____

AGGRESSIVE..... _____

COOPERATIVE..... _____

ANTI-SOCIAL..... _____

INDEPENDENT..... _____

WARM..... _____

INTOLERANT..... _____

MODEST..... _____

ARGUMENTATIVE..... _____

SINCERE _____

CONCEITED..... _____

SELF-ASSURED _____

TIMID _____

SUBMISSIVE _____

SYMPATHETIC..... _____

It is now time for your group to discuss the issue. Remember that the task for your group is to present a united front at the week-end forum. You may find it helpful to think of this as an opportunity to become acquainted with the other group members as you try to understand their position and reasoning on this issue.

To start your discussion, each group member will present her or his view to the others. This will involve stating both your position and your reasons supporting it: It will also involve listening to each other's contributions. Please listen to each other carefully, because this is your opportunity to get to know one another by working together to find the one position that best represents your group. Remember that your group will be viewed as more effective if you join together to present a strong, united Canadian position.

After each member has presented her or his view, your group will then discuss the information at hand. Again, this is your opportunity to get to know one another, to settle any differences, and to pull together as a group.

When your discussion time is over, your group will be asked to indicate its position and to write down the reasons supporting your position. You will find the group response sheet in the center of the table.

**Appendix I: Group Instructions,
the *Nuclear Arms Dilemma*, and
Response Forms**

In this study, we are asking groups of students to discuss the issue of nuclear armament versus nuclear disarmament as a means of deterring nuclear war, and, hence, serving world peace. Even though we may not see the issue as directly relevant to Canada, there is no question that it poses a threat to our own security. We have all probably given some thought to how nuclear arms might affect our own future personal security.

Suppose that you and your group have just been invited to attend a Student's Forum on Nuclear Issues, which is being held at Stanford University in California. Your group will represent Canada, and will serve as a Canadian student advisory committee to American students who have set up the forum to address the issue of nuclear arms and deterrence.

There are two tasks for you to complete individually, before your group begins its discussion of the issue. Both tasks will help you to clarify your own thinking on the matter so you will feel prepared to contribute to the group discussion. First, we ask that each one of you think about your own position on this issue; and, secondly, we ask that you write down your own reasons to support your position. To help you to think about your own position, we will identify the two positions raised by the issue for you now:

- (1) The United States should drastically reduce its arsenal of nuclear weapons as the best possible means towards peace; OR**
- (2) The United States should maintain or increase its arsenal of nuclear weapons as the best possible means towards peace.**

Once you have the two positions clear in your own mind, please turn the page to read about the Nuclear Arms Dilemma.

Nuclear Arms Dilemma (Form A)

Right now, the major world powers have amassed a nuclear arsenal sufficient to destroy our planet many times over. They are engaged in what is referred to as a "nuclear arms race". The balancing of nuclear arms through arms build-up is thought, by some, to deter the event of nuclear war. Others, however, disagree.

On the one hand, many argue that the possession of existing nuclear weapons and the investment to develop even more nuclear weapons deters major powers from launching a nuclear attack at each other, because a nuclear attack might set off a counterattack, and, in time, eventuate in nuclear annihilation. The general argument behind armament as a means to deterrence is that an arms build-up will increase world stability by decreasing the likelihood of nuclear war; thus, war preparations serve to protect and sustain world peace.

On the other hand, many argue that deterrence involves a threat to the safety of all of us. Each one of us is held hostage in a situation that promises little, if any, security. Deterrence does not, it is argued, offer a clear-cut decrease in the risk of nuclear attack; indeed, if deterrence fails, everybody will die. Just as there is the risk of death due to a failure in deterrence, there is also the risk of death posed by nuclear accidents arising from the presence of nuclear weapons. Both risks would be decreased, they argue, by the move to disarm immediately.

Here is the dilemma. If disarmament is chosen, we may all perish from nuclear destruction. If armament is chosen, we may still all perish from nuclear destruction. What should the Americans do?

After you have read the above nuclear arms dilemma, please turn to the next page for your instructions.

Nuclear Arms Dilemma (Form B)

Right now, the major world powers have amassed a nuclear arsenal sufficient to destroy our planet many times over. They are engaged in what is referred to as a "nuclear arms race". The balancing of nuclear arms through arms build-up is thought, by some, to deter the event of nuclear war. Others, however, disagree.

On the one hand, many argue that deterrence involves a threat to the safety of all of us. Each one of us is held hostage in a situation that promises little, if any, security. Deterrence does not, it is argued, offer a clear-cut decrease in the risk of nuclear attack; indeed, if deterrence fails, everybody will die. Just as there is the risk of death due to a failure in deterrence, there is also the risk of death posed by nuclear accidents arising from the presence of nuclear weapons. Both risks would be decreased, they argue, by our country's move to disarm immediately.

On the other hand, many argue that the possession of existing nuclear weapons and the investment to develop even more nuclear weapons deters major powers from launching a nuclear attack at each other, because a nuclear attack might set off a counterattack, and, in time, eventuate in nuclear annihilation. The general argument behind armament as a means to deterrence is that an arms build-up will increase world stability by decreasing the likelihood of nuclear war; thus, war preparations serve to protect and sustain world peace.

Here is the dilemma. If disarmament is chosen, we may all perish from nuclear destruction. If armament is chosen, we may still all perish from nuclear destruction. What should the Americans do?

After you have read the above nuclear arms dilemma, please turn to the next page for your instructions.

Now that you have read the Nuclear Arms Dilemma, try to adopt one of the two positions, and then indicate your choice below.

Position Adopted (circle one):

- (1) I think that the United States should drastically reduce its arsenal of nuclear weapons as the best possible means towards peace; OR
- (2) I think that the United States should maintain or increase its arsenal of nuclear weapons as the best possible means towards peace.

After you have circled your position, try to come up with three reasons to support it.

My reasons for supporting this position:

- (1) _____

- (2) _____

- (3) _____

Group Position Adopted (circle one):

- (1) We think that the United States should drastically reduce its arsenal of nuclear weapons as the best possible means towards peace; OR**
- (2) We think that the United States should maintain or increase its arsenal of nuclear weapons as the best possible means towards peace.**

Our reasons for supporting this position:

- (1)** _____

- (2)** _____

- (3)** _____

Appendix J: Post-Experimental Questionnaire

Listed below are two scales asking you to rate the degree to which you agree with the group's final decision about its position on the issue of nuclear arms and with the group's final reasons in support. Each scale ranges from -2 (Strongly Disagree) to 2 (Strongly Agree). Your task is to circle the number that best represents your degree of agreement or disagreement.

The degree to which I agree or disagree with the GROUP'S POSITION is:

The degree to which I agree or disagree with the GROUP'S REASONS is:

The undersigned hereby recommend to
the Faculty of Graduate Studies and Research
acceptance of the thesis,
"Small Groups, Social Influence, and
Issues of Peace and Security"
submitted by
Betty M. Bayer
in partial fulfilment of the requirements
for the degree of
Doctor of Philosophy

.....
Chairman, Department of Psychology

.....
Thesis Supervisor

.....
External Examiner

Carleton University

September, 1989

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