International
Studies
Quarterly

International Studies Quarterly (2009) **53**, 23–47

Gender and Negotiation: Some Experimental Findings from an International Negotiation Simulation[1]

Mark A. Boyer

University of Connecticut

Brian Urlacher

University of North Dakota

Natalie Florea Hudson

University of Dayton

Anat Niv-Solomon

Clark University

Laura L. Janik

University of Connecticut

Michael J. Butler

Clark University

Scott W. Brown
Andri Ioannou

University of Connecticut

Increasingly, scholars have taken note of the tendency for women to conceptualize issues such as security, peace, war, and the use of military force in different ways than their male counterparts. These divergent conceptualizations in turn affect the way women interact with the world around them and make decisions. Moreover, research across a variety of

Author's note: The data used in this article can be obtained from the *International Studies Quarterly* Dataverse Network page at (http://dvn.iq.harvard.edu/dvn/).

[1] The authors wish to thank the editors, the reviewers for ISQ, Mary Caprioli, and Katherine Scheurer for helpful feedback on earlier drafts. The data collection for this article was funded by a grant from the U.S. Department of Education's Office of Educational Research and Improvement (now called the Institute for Education Sciences). Information about the IRB approval for this study can be provided upon request.

fields suggests that providing women a greater voice in international negotiations may bring a fresh outlook to dispute resolution. Using experimental data collected by the GlobalEd Project, this article provides substantial support for hypotheses positing that females generate significantly different processes and outcomes in a negotiation context. These findings occur both in terms of female negotiation behavior and the impact of females as negotiation facilitators/mediators.

For most actors in our global system, peace and stability are more desirable than conflict and war. Yet, the news from any given day can attest that this desire is rarely achieved for any extended period of time, even for actors who implicitly and explicitly work to fulfill that desire. There are many reasons why this apparent failure at goal achievement occurs, as research in the conflict studies field ably demonstrates. But as the number of women in roles of power continues to increase, one is struck by the relatively small amount of empirical evidence on how women impact conflict development and conflict reduction. To date, aside from the rise of such figures as Madeleine Albright and Condoleeza Rice among a relatively few others cross-nationally, we have too few data points to examine in a systematic way the impact a less gendered future might bring to diplomacy, and international affairs, more generally. As a result, this nascent trend begs the question: will a world traditionally dominated by men look different as more women take part directly in international affairs?

Beyond the mere placement of arguably token women in high profile decision-making roles, however, there are recent developments in the global policy community that indicate a change (at least rhetorically) toward a less gendered world community. The unanimous passage of UN Security Council Resolution 1325, for instance, sent a clear normative message to the international community that women have an important role to play in the prevention and resolution of conflicts and in peace-building. Recognizing that women have traditionally been denied a full role in these efforts, UN Resolution 1325 seeks to ''increase the participation of women at decision-making levels in conflict resolution and peace processes'' as well as at the grassroots level (United Nations [UN] 2000a, Point 13). This resolution is thus rooted in the beliefs that women bring particular values to the negotiation table given their unique life and socialization experiences, and that these experiences have been habitually excluded from the public sphere because of the exclusionary nature of international negotiations (Hudson 2005; United Nations [UN] 2000b). Resolution 1325, then, targets current international practices regarding peacekeeping and conflict resolution that so often reflect andocentric biases.

Increasingly, scholars have taken note of the tendency of women to conceptualize issues such as security (Tickner 1992), peace (Cockburn 1998), war (Salla 2001), and the use of military force (Eichenberg 2003) in different ways than their male counterparts.[2] These divergent conceptualizations in turn affect the way women make decisions and interact with the world around them. Thus, many hypothesize that providing women with a greater voice in international negotiations may bring a fresh outlook to dispute resolution (Anderlini 2007). This is not to argue that increasing the number of women employed in decision-making positions will eliminate war and conflict altogether, but rather that bringing new insights and policy prescriptions to the negotiating table may open

[2] More specifically, ample evidence suggests that women tend to be more peaceful and cooperative than men and much less willing to support the use of force. See also Fite, Genest, and Wilcox (1990); McGlen and Sarkees (1993); and Sapiro and Conover (1993).

up unexplored avenues for tension reduction and present new options for the lasting resolution of intractable conflicts.

Still, even if we assume that women possess unique conceptions of war, peace, and security as is argued by some feminist and gender studies scholarship, it remains empirically unclear how such perspectives are manifest in practical policy preferences and actions in negotiation and diplomatic processes. As a result, this article focuses on the following question: how does the impact of women on negotiation and conflict resolution differ from the impact of men?

Previous scholarship in this area tells us that men and women often view world politics differently. As a result, it is essential to understand how these different perceptions interweave and diverge in the process of negotiation so that we as a society can improve upon and better understand methods of tension reduction and conflict resolution. Additionally, examining the effect of gender on negotiation is imperative not only for reasons of scholarly edification, but because it may provide insights into what a more gender-equitable world might look like. Thus, this study holds predictive value for how the world might work as more women are integrated into international policy processes.

The importance of negotiation within the international arena cannot be understated, and indeed interpersonal interactions occurring in the international negotiation context are at times the only thing standing between war and peace. As John Merrills claims, ''negotiation is the principal means of handling all international disputes and is employed more frequently than all other techniques of conflict management'' (Merrills 1991, 2). Thus, the study of negotiation is not only important because it is the primary means for conflict resolution, but also because of the frequency with which it is used. As one author puts it, ''[I]n the international arena, where conflicts can easily escalate into highly destructive and destabilizing wars, and where there is an absence of any generally accepted rules of the game, negotiation by diplomacy is as common as conflict itself'' (Jackson 2000, 324). And as Paul Sharp (1999, 34) adds, ''diplomacy remains the 'engine room' of international relations, as both the site of most of the actual relations we study and as the immediate motive force of their being undertaken.'' Thus, because negotiation plays such a large role in conflict resolution, and more generally in international interactions, it is vital to understand thoroughly how disparate approaches to the process of negotiation affect procedures and outcomes.

To begin to understand the potential impact of gender on negotiation, we examine data that are the products of 4 years of data collection from both middle and high school students throughout the United States involved in the GlobalEd Project (http://www.globaled.uconn.edu).[3] These data are useful in examining persistent gender differences in attitudes and behaviors as they examine boys and girls at an early age, possibly before they become fully steeped in societal mannerisms and culturally driven expectations. Put succinctly, this study provides a possible view into the future of international negotiations. Before we delve into this data, however, we examine some literature on gender and negotiation that informs our analysis.

Understanding Gender Differences

When trying to understand the roots of gender differences in interpersonal and social settings, there are two basic explanations for both the perceived and real

[3] Although some may question the utility of studying middle/high school boys and girls because our concern centers largely on gender and current international negotiations, indeed kids matter. Not only is it essential to study the attitudes and behaviors of today's youth because they will be tomorrow's leaders, but also because research indicates that current attitudes are relatively good predictors of the trajectory of future attitudes (see Boyer et al. 2005, 210–213). Thus, our current study provides a hazy window into the future.

differences between men and women. The first centers on the role of biology, while the second centers on the social construction of gender roles. According to the biological argument, a person's sex creates conditions in which that person is particularly adept at certain skills and inclined toward certain views and actions, and less so toward others. In essence, such arguments focus on the extent to which biological differences between men and women account for each sex's unique physical and mental characteristics. Prominently in the international relations field, this perspective has been espoused in an oft-cited article by Fukuyama (1998), where he discusses the impact of institutions as constraints on biologically rooted aggressive behaviors.[4]

A second set of explanations focuses on the socially constructed roles individuals assume and are expected to perform. These roles—rooted in race, class, gender, and elsewhere—are not static, but constantly changing and in flux (Rothenberg 2007). In this vein, Ruddick (1990) has elegantly argued that the practice of ''mothering'' shapes thinking and ultimately action. For social constructivists, then, men and women's roles are not inherent or predetermined, but rather a social fact that can change through practice, interaction, and the evolution of ideas and norms.

For our purposes, our research does not subscribe to either approach in demonstrative ways. Rather, we view gender as the product of a variety of inputs. If anything, we would argue for the validity of the concept of ''brain plasticity,'' an approach that identifies the nervous system's ability to change its organization and functions over time. This conceptual understanding of gender is fundamentally the result of the formation and stabilization of certain synapses, as they are affected by ''experience, drugs, hormones, maturation, and stress'' (Hyde 2007, 262). As a result, brain plasticity provides a basis for understanding the causes of gender differences that melds both schools of thought discussed briefly above.

Understanding Gender's Impact on Negotiation

Understanding the impact of gender on the negotiation process is a subject that has received a good deal of attention (and debate) in the disciplines of political science, psychology, sociology, and anthropology, among others. Some substantive research foci include:

- workplace dispute resolution and employment outcomes (e.g., Gwartney-Gibbs and Lach 1994; Ridgeway 1997);
- social movements and organization (e.g., Alvarez 1990; Cameron 1993; Taylor 1999);
- marriage reconciliation, family relations, and household management (e.g., Sanchez 1994);
- crisis resolution, use of force, and peacekeeping (e.g., Caprioli 2000; Caprioli and Boyer 2001; Hudson 2005; Tessler and Warriner 1997; Whitworth 2004).[5]

Even across these wide-ranging venues, they argue for similarities in the manner in which women approach negotiation, whether in crisis resolution or household management. Kolb and Coolidge (1991, 262), for instance, identify four common themes that women draw upon when attempting to frame and

[4] For a much more comprehensive discussion on the biological link between men and war, see Goldstein (2001).

[5] Not all scholars view gender as having an effect upon negotiation. For example, Cecilia Ridgeway argues, ''males and females can act very similarly when they are placed in secure, similar roles within a group'' (Ridgeway 1992, 151). It is only when group dynamics become imbalanced that gender begins to have an effect upon the negotiation process.

construct negotiation: (1) a relational view of others, (2) an embedded view of agency, (3) an understanding of control through empowerment, and (4) problem-solving through dialogue. Because women utilize these ''themes'' differently than do men, Kolb and Coolidge argue, they in turn affect the negotiation process and outcomes.

Along these lines, men and women possess unique ''self-schemas'' or ''construals of the self'' that effect the way they approach negotiation (Babcock and Laschever 2003). As a result, many psychologists conclude that, in general, women's ''self-schemas'' tend to be interdependent, while men's tend to be independent (Cross and Madison 1997). Men's independent self-schemas cause them to define themselves in terms of distinction from others. Women's interdependent self-schemas cause them to define themselves in terms of their connections to others (Babcock and Laschever 2003; see also Markus and Kitayama 1991).[6]

Because women tend to define themselves more through their relationships than do men, their actions and rhetoric within the negotiation process may be more oriented toward maintaining and protecting these relationships. In contrast, men tend to focus on end gains, making the achievement of personal preferences and goals the primary negotiation objective. For example, in a recent study of male and female students engaged in a job negotiation, Barron (2003) concluded that men are more likely to see the ''instrumental'' side of negotiation (i.e., a focus on the outcome), while women are likely to focus on the ''interpersonal'' side, and thus the process rather than the outcome.

This may well vary, however, depending on the audience for the decision-maker in question and the nature of the socialization process through which the decision-maker came. For instance, negotiating at a very high level over sensitive security issues might produce a dynamic where compromise is less likely regardless of who the decision-maker is, such as when U.S. Secretary of State Rice negotiated with counterparts around the world on nuclear proliferation issues. In addition, thinking about the present examples of female decision-makers, we must also keep in mind that they continue to operate in a male-structured world and were socialized in a male-dominated environment. Relevant to this point, many scholars suggest that in order for women's impact to be truly felt on the global negotiating stage, a critical mass of women needs to be reached (Britton 2006).

Women's embedded view of agency—where the self and other are viewed in terms of mutual aid and support—affects the way women perceive concepts of power. In most traditional international relations and political settings, power has been defined as ''the ability to influence the decisions of others'' (McCarthy 1991, 125). Possessing power allows actor A to get actor B to do something B would not otherwise do, as well as preventing actor B from doing something B wants to do (Digeser 1992). Viewing power in this dichotomous manner means that both powerful and powerless parties sit at the negotiating table. As Raiffa (1982) so aptly described it, the negotiation process, therefore, involves ''the dance of positions.''

Yet this idea of building power at the expense of others does not necessarily sit well with many women, as doing so may negatively affect their relationships with the other involved actors. Babcock and Laschever argue that ''women often feel uncomfortable negotiating even in situations in which this type of controlled conflict is expected and appropriate, because promoting conflict is foreign to their self-schemas and their sense of identity'' (Babcock and Laschever 2003, 119). Instead of viewing power in the traditional sense, women tend to recognize

[6] It is worth noting that Kashima et al. (1995) find that these female connections to others should primarily be considered emotional attachments and not be mistakenly construed as orientations toward collectivism. Thus, they argue that the collectivism often attributed to some Asian cultures is different than the impact of gender on relationships.

power as emerging from interaction (Surrey 1987; see also Peterson and Runyan 1999).

It is worth noting that women's collaborative negotiating tendencies may not necessarily result from a desire to maintain close connections with their counterparts. Some argue that women are more collaborative simply because they converse more than men, allowing for the sharing of ideas and thus creating a friendly negotiation setting. The more people openly converse, the more likely they are to build mutual understanding of others' thoughts and feelings.

As Babcock and Laschever claim, ''increasing the flow of information between the negotiators is essential to achieving a superior solution in an integrative bargain…and women are more likely to use these methods'' (Babcock and Laschever 2003, 169–170; see also Baird and Bradley 1979; Belenky et al. 1986; Wood and Rhodes 1992). Therefore, important to our discussion and the analysis further on, women may be more oriented toward cooperation because they value the very process of communication and not necessarily because collaboration allows them to make and keep friends.

In addition, one should distinguish communication and dialogue from debate and argument. Dialogue is best thought of as a forum where the ideas of all parties are explored through interaction. It is a way to enhance the power of all parties involved in a negotiation as well as build further connections. Hence, debate and argument where parties seek to maximize their interests in a collective setting tends to be emphasized less by women. As Kolb and Coolidge assert, ''women seek to engage the other in a joint exploration of ideas whereby understanding is progressively clarified through interaction. There is the expectation that the other will play a part of active listener and contribute to the developing movement of ideas'' (Kolb and Coolidge 1991, 266). Further, women's conception and utilization of dialogue as a form of empowerment is distinct from conventional conceptions of negotiation by which the parties involved have fixed interests and goals. In contrast, dialogue is viewed as an avenue where goals and interests are discovered and evolve; thus, the stance of those involved is flexible and adaptive as opposed to rigid and fixed.

Other Factors Intervening in Gender's Impact on Negotiation

Before moving on to the specifics of our research design and data analysis, we need to discuss a number of other factors that may also play an intervening role in our understanding of the gender and negotiation relationship. Several recent experimental studies which demonstrate the varied impact of gender roles as embedded within the nature and process of social interaction and negotiation, have particular relevance for our research design.

In an experimental setting, work by Sell et al. shows a mixed record of gender effects in social interactions. Sell (1997) found that gender had no independent impact on cooperation in the pursuit of public goods, but did find evidence of some interaction effects in her study. Specifically, she found no statistically significant evidence that women contribute at higher rates when interacting with women than when interacting in groups with men (with women in the minority). But by contrast, she did find that men contribute more toward a cooperative outcome when interacting in groups of women (with men in the minority). Put simply, women were not more cooperative with other women than they were with men. This study provides further support to other work by Sell, Griffith, and Wilson (1993) that found that neither the sex of the group member or the sex composition of the group had a significant impact on an individual's contribution to the group when money was involved. When other commodities were involved, some sex effects emerged.

In another gender-focused experimental study, Croson and Buchan (1999) found that women exhibit significantly higher levels of reciprocity than men in an experimental trust game. Based on data in post-experiment questionnaires, they argue that women feel more obligated than men to reciprocate cooperative interactions. Thus, cooperation by women may not be rooted in altruism, but perceived as something that is socially required. They conclude by arguing for greater integration of gender into economic modeling about risk and interchange. It is worth briefly noting that this conception of reciprocity differs from the one used below in the GlobalEd negotiation message coding. The GlobalEd use of reciprocity focuses more on the ''sender'' making offers for ''trading'' and ''getting something in return'' rather than on socially-prompted reciprocity coming back from a ''recipient'' as implied in the research by Croson and Buchan.

Related to these findings about intra-group interactions, Maccoby (2002) argues that there is accumulating evidence that the configuration of gender groupings elicits certain behaviors that are not characteristic of the individuals when alone. This may result from the amplification in groups of what are only weak individual tendencies. Work by Rachel Simmons (2002) and Marion Underwood (2003), among others, gives credence to the notion that the organization of gender groupings and their internal interactions can have significant impact on outcomes from such groups. Their separate work on relational aggression suggests that aggression is not just a male form of interaction, but that it takes on a more subtle form among girls and women. In Simmons (2002) words, ''[t]here is a hidden culture of girls' aggression in which bullying is epidemic, distinctive and destructive'' (3). As a result, although our current experimental environment does not directly allow us to test the impact of intra-group dynamics, we must note that relational aggression may have important mitigating effects on many basic premises about gender-based differences in both collaborative and conflictual interactions.

Thus, in our research design, as discussed below, the findings about group decision-making may provide some insight into the process and outcomes in our simulated negotiations. Bouncing off of the work by Maccoby, Simmons, and Underwood, it may be that the gender groupings in the simulation environment provide caricatures of individual characteristics. It is possible that dominant individuals within groups may also exert intellectual control in ways that are transparent to the simulation outcomes. Thus, in our analysis and conclusions, we can only speculate about the nature of interactions within the mixed-gender groupings in our study. Only by examining the intra-mixed-gender group interactions much more closely than is possible in our present research design will we be able to move beyond speculation to harder conclusions.

Other work by Croson (1999) also examined the impact of computer-mediated-communication (CMC) versus face-to-face (FTF) interaction on negotiated outcomes, another significant factor in our design. Her study, however, did not factor gender directly into the analysis. Croson's findings show that CMC results in somewhat more integrative (win-win) types of outcomes than FTF settings. She also found that CMC produced more equal outcomes than FTF. In essence, the ''electronic medium 'levels the playing field' between stronger and weaker negotiators'' (33). Given that GlobalEd simulations use a CMC format, these findings may have implications for the interpretation of our results, but our research design, which does not compare CMC and FTF negotiations, is not able to contribute to this particular strain of research.

When linking these findings on CMC to gender, it is worth noting that Guiller and Durndell (2006) found that females in an asynchronous environment were more likely than men to make conciliatory comments and express agreement. The analysis of Katz et al. (2007) generally supports those findings, though they

cite some earlier work that found females as more competitive in CMC environments than in FTF ones. Only referenced for female samples (i.e., not relative to males), this might be attributed to social norms that produce stronger constraints in FTF situations on female cooperative behavior. In an entirely speculative vein, this finding may relate to our earlier discussion of the hypothesized tendency for women to value interaction over outcome and relationship over goal satisfaction. It may also be an artifact of gender-based effects related to how men and women interact with technology. Research in this area suggests that women are at a disadvantage to men when learning about computers and learning in computer-aided settings (see Cooper 2006).

Lastly, given that we use middle school and high school students as the subjects for our experimental work, the reader should note a number of tendencies related to age and gender roles. Reis (1998, 2007), has found that girls in middle school tend to be more socialized into traditional female roles and behaviors than their counterparts in high school. Thus, it is likely that there will more convergence with gender characterizations among girls (and boys) in earlier years than in later ones. In essence, as Reis (2007) states, by high school, many girls have worked through ''identity issues and have a healthier sense of self.'' Our analysis splits the sample across the two levels, so we can provide some new empirical evidence on this set of ideas.

In closing and relating to our study's longer-term predictive value, seminal work in the political socialization field (see Easton and Dennis 1969; Converse 1976; Markus 1979, among others) established a significant degree of stability between attitudes (and their associated behaviors) from adolescence to adulthood. Thus, we would argue that the behavioral patterns we examine in the following sections can be useful predictors (though imperfect ones) of adult behavior in similar social interaction settings. The reader is encouraged to refer to Boyer et al. (2005) for an in-depth discussion of the socialization literature and its implications for predictive value.[7]

Tying It All Together

Returning to our central research question, previous research and writing clearly suggests that gender can have an important impact on negotiation processes and outcomes. Less clear is the exact nature of that relationship and the way other inputs impact it. Building on what we have discussed thus far, Figure 1 displays the basic relationships we examine in the following analysis. Experimental data collected through GlobalEd simulations with middle and high school students provides us with a structured research environment to study the negotiation process and allows us to focus on most of the aspects of the conceptual discussion from above. Moreover, given GlobalEd's focus on secondary school age children, we are able to examine the impact of gender on negotiation during a critical transition period in the socialization process. As a result, our research has the potential to shed light on how gender socialization evolves, even if the final results are not perfectly transferable to adult behavior patterns.

Research Design and the GlobalEd Project Environment

Before moving to our data analysis, it is important to discuss briefly the experimental environment in which our data were collected. The GlobalEd Project is a

[7] The reader should note that we do not assert that the behavioral patterns we observe for middle school or even high school samples are perfect predictors of adult patterns of behavior. Rather, they provide us with some clues about adult patterns and also provide us with quite concrete evidence about the gender-based socialization processes that take place during adolescence, particularly as they pertain to negotiation and social interaction.

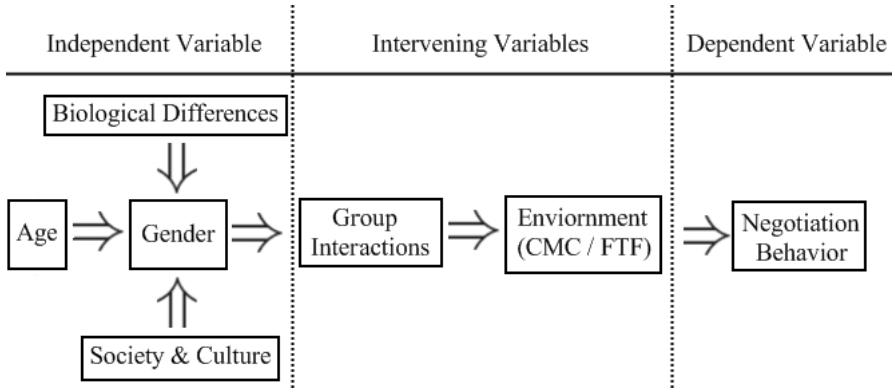

FIG. 1. A Gender/Negotiation Process Model

research project examining gender differences in knowledge, attitudes, and behaviors (KABs) related to international studies, the use of technology, and other student outcomes.[8] The sample that we examine in this study—high school students ranging approximately in age from 14 to 18 and middle school students ranging in age from 10 to 14—can provide an illustration that is less corrupted by political socialization and assumptions about the ways international relations proceed in the ''real world'' than would be the case with other potential experimental samples. The reader should note that in the GlobalEd environment, we actually conduct *quasi*-experiments, as the subjects/students are not randomly assigned to groups. Rather, classroom teachers assign students to a specific gender grouping to create the groupings discussed in more detail below. For ease of reading, however, we have decided to use the term ''experiment'' rather than ''quasi-experiment'' throughout this paper.

At its most fundamental level, GlobalEd introduces problem-based simulations into the social studies classroom and is rooted in the Project ICONS simulation model (see http://www.icons.umd.edu). Interactions are facilitated from remote locations through a specially designed system that allows for participants to interact through Web-based e-mail (asynchronous communication) and real-time conferencing (synchronous communication). About 8 weeks before the simulation begins, students are assigned their country-team. Students are instructed to learn about the values and customs of their respective countries prior to the simulation so that they are prepared to make appropriate ''in character'' responses (i.e., remain consistent with the policy positions and core national and cultural value systems of their assigned country). In addition to being assigned their country-team, students are also assigned by their teachers to become ''experts'' in a particular issue area. In other words, country-teams are further broken down into smaller, issue-focused groups of approximately 3–5 students with the total country-team populated with 20–25 students on average. Each of these smaller groups are given concrete analytical tasks related to five broad topical areas (human rights, global environment, conflict and cooperation, international economics, and others varying by year) presented in the simulation scenario. In particular, students are challenged to develop comprehensive policy responses for

[8] See http://www.globaled.uconn.edu for much more detailed information about the GlobalEd Project. Information on project funding and IRB protocols can be provided upon request.

the particular problems laid out in the scenario across the five issue areas.[9] Most simulations include about 15 country-teams.

Within the GlobalEd Project environment, the issue groups are organized along gender lines, with a mix of all-female, all-male, and mixed-gender issue groups. Thus, within a particular simulation issue area, GlobalEd has sought to obtain a relative balance of all three gender groupings; at the very least, for example, in a given simulation issue area, there should be at least one all-female group, one all-male group, and one mixed-gender group. Because of this control over gender distribution, the smaller issue groups are the primary research focus of this analysis. Moreover, student negotiators are ''blind'' to the gender and identity of students in other groups throughout the simulation experience. As a practical matter, students are obviously aware of the gender and identity of their own group members. Thus, we control for the potential social dyadic effects of male–male, female–female, and male–female interactions between groups even as these effects continue to operate within groups. Moreover, even during the real-time conferences, the interactions are gender-blind across teams and issue groups, as all simulation communications (synchronous or asynchronous) are performed using the ICONSnet simulation software.

A simulation lasts a total of 5 weeks and students participate each school day in the simulation, whether through on-line conferences, e-mails to other countries, searching the Web for information, or preparing diplomatic documents and responses. Additionally, students are able to use their own computers from home or other public access points to draft documents, review data, and collaborate within their own country or with other countries. There are no student names exchanged between countries nor are there any references to the gender of specific student negotiators. Only names such as *Canada* (human rights committee) are used to communicate with *Nigeria* (human rights committee). As the simulation software provides all e-mail and conferencing access, the anonymity of the participants is maintained between countries. Students are restricted to the use of the simulation software for inter-class/country communications. During the game, students must interact with participants from other schools using the technology tools within the simulation to discuss, debate, and negotiate real international issues.

To provide some level of control and consistency for the subject matter, the United States team is played by one or more graduate students. The data from this ''control'' team is not included in the analysis of student responses. An experienced doctoral student in international relations serves as the simulation coordinator or Simcon. The role of Simcon is to monitor the on-line discussions, review e-mail transmissions between countries, and manage the simulation so that country-teams stay in character, insure that appropriate diplomatic language is used, and answer questions about rules and procedures for the participants.

Experience, has also shown that most simulations require Simcon to play a facilitative role, encouraging groups to follow up on their messages and helping to frame the agenda. Consequently, it is possible that there is an administrative effect in GlobalEd simulations that tends toward collaboration.[10] Simcon plays a

[9] It is important to note that the scenario for the simulation is set 6 months into the future. Sample scenario texts can be provided upon request. The objective of the future orientation for the simulation scenario is that it allows students to develop creative and innovative solutions to the problems presented to them, rather than simply regurgitating headlines or public statements of world leaders gleaned from the news media on a daily basis during the simulation. But its proximity to ''real'' time also requires students to avoid deviating too far from their country's real foreign policy approach.

[10] See Beer (2001) for further discussion of administrative effects in experimental research. Future GlobalEd simulations will attempt to test for the presence of this effect by varying the role played by Simcon across simulations. This will be performed through the systematic use of specific prompts (or instructions) given by Simcon in an effort to study this potential bias in a controlled way.

particularly strong role in ''real time'' conferences, where participants engage in a live debate. The agenda for this debate is based on the scenario topics and is developed by Simcon in response to the issue discussions occurring in the regular message sessions.

Although the debates in the simulations can be quite heated, the GlobalEd simulation approach is biased toward cooperative interactions, because of the Simcon facilitation role and the absence of explicit and usable coercive policy tools, such as military force. As a result, we argue that if significant noncooperative patterns are found, the results are all the more robust, because of the bias within the simulation framework against coercion and the use of force.

Measuring Negotiation Styles

The GlobalEd Project has developed a conceptual framework for coding negotiation styles. This framework is grounded in a lengthy survey of the negotiation field and accordingly is more complex than the simple ''hard versus soft'' style dichotomy often referenced in the popular literature and press. Moreover, the development of specific conceptual styles and a coding framework specifically centered on the research goals of the GlobalEd Project offers the advantage of greater concept validity than the adoption of a pre-existing framework (Druckman 2005, 258–259). The inventory was constructed through analysis of research in the negotiation field and the diverse tactical approaches used by negotiators in their interactions with one another.[11] Along these lines, GlobalEd developed a framework consisting of six negotiation approaches (Collaborative, Conflictual, Reciprocal, Self-Interested, Assertive, and Creative). We also recognize that these negotiation approaches are not always used independently and augment this inventory by recognizing the use of ''multiple'' negotiation approaches as a seventh strategy. Thus, while our analysis might not be as elegant as other categorizations, it allows us to get at more of the nuance of the negotiation styles employed. Put simply, in this paper we have made the conscious choice for messiness and potentially deeper understanding over elegance, parsimony, and incomplete understanding.

In terms of the operational internal validity of the message coding structure, our negotiation styles inventory was subjected to a content validity study drawing on the expertise of a group of more then ten international relations scholars. Each scholar was provided with a series of ''prompts'' and was asked to rate each prompt relative to its inclusion in a particular negotiation category. Prompts that were a source of dispute across expert raters were dropped from the inventory, revised accordingly, or shifted to a more appropriate category. The negotiation styles inventory that emerged from this process is displayed in Appendix A. More detailed information can be provided about this process upon request.[12]

Methodologically, it is tempting to arrange these negotiation styles into an ordinal hierarchy; however, we argue that this is conceptually and practically problematic, as the inventory was developed to provide greater nuance than a simple conflict/cooperation, hard/soft continuum, as some of the categories (e.g., creative) fall outside a strict hierarchy of tactical intensity. Furthermore, because multiple negotiation styles can be found within a single message, it is difficult to assign a single value to each message.

[11] For more detailed understanding of the underlying conceptual logic of the inventory construction and the coding process, the reader should turn to Druckman and Hopmann (2002); Florea et al. (2003); and McDermott and Cowdem (2001).

[12] The reader should note that each style is coded as a separate dichotomous variable. A message uses a particular negotiation style or it does not. Not all messages use one of the six negotiation styles. Furthermore, some messages exhibit use of more than one negotiation style. For these messages, the use of each style is recorded and the message is also coded as using ''multiple'' styles.

Message coding was carried out by trained coders (most often political science graduate students) working under the supervision of a GlobalEd staff member. Coders initially worked in teams, evaluating discrepancies in coding decisions until inter-coder agreement levels consistently reached 90 percent. At that statistical point, coders were sent off to work independently, but regrouped periodically to compare cross-coded results. A total of ten different coders were used in the coding process, but each simulation was coded by two or three coders. Across ten simulations coded for this project, the inter-coder agreement scores range between 72 percent on the low end to 98 percent on the high end. Dropping out those high and low scores, inter-coder agreement ranged between 87 percent and 92 percent for the other eight simulations. The data presented in this paper are the result of ten simulations (both high school and middle school) conducted between 2001 and 2004.

Hypotheses

Having laid out the framework used to examine gender and negotiation in this study, we now turn to the task of pinning down specific hypotheses linking gender to negotiation behavior. Each of the following hypotheses builds from two key findings in the existing literature. First, as discussed above, middle school students tend to hold more closely to traditional gender roles than do high school students (Reis 1998, 2007). Thus, we would expect to see greater differences in gender grouping behavior in middle school than in high school. Second, introducing women into a group not only changes the gender make up of the group, but it may also change how men in the group act. Thus, we should expect to see differences between all-male groups and mixed-gender groups.

As discussed above, one significant theme in gender studies research as it relates to negotiation, and social interaction more generally, is that females tend to place greater value on the process of negotiation and continued interaction relative to their male counterparts. As a result, the social character of negotiation is a value in and of itself for women and girls. This suggests that female negotiators will engage in more frequent interactions than their male counterparts. This proposition is expressed in Hypothesis 1.

Hypothesis 1: *All-female groups should exhibit higher levels of interaction than either all-male groups or mixed-gender groups. Mixed-gender groups should exhibit higher levels of interaction than all-male groups.*

A second dimension of message volume and gender relates to the gender of the individual moderating the simulation.[13] In drawing analogies to the real world of international relations (as we are trying to do within the GlobalEd simulation environment), Simcon plays many of the same roles that a trained mediator would in navigating a negotiation process around obstacles. Extensive experience in conducting simulations with students at all levels has indicated the need for a facilitator to ensure the integrity of the educational and experimental process.

Although Simcons are trained to be as unobtrusive as possible in the actual negotiations, Simcons are, nonetheless, people and bring to the role of facilitator an array of individual and social characteristics and experiences that may

[13] It is also important to note from an experimental standpoint that the student diplomats in the simulation do not know the name or gender of the Simcon with whom they interact during the simulation period. Moreover, during the 4-year period of data collection, both the male and the female Simcons changed several times, which has introduced a substantial degree of diversity across Simcons. Thus, we would argue that the findings below are not the artifact of a single Simcon's style.

impact the negotiation process, even in a computer-mediated setting, such as the GlobalEd simulation environment.[14] Along these lines, Weingarte and Douvan (1985) found that females were more likely to equate mediation with ''improvisational jazz or cooking together'' while males drew analogies between mediation and ''chess or a prisoners' dilemma game'' (35). These differing appraisals of a mediator's role, then, may well affect Simcon's impact on the simulation process. The potential for Simcon to alter the negotiation process subtly prompts Hypothesis 2.[15]

Hypothesis 2: *Simulations mediated by female facilitators will exhibit higher levels of interaction than simulations mediated by male facilitators.*

Our earlier discussion also identified a number of differences in how men and women approach conflict and conflict resolution. Men are thought to be more willing to isolate the person from the problem and make use of aggressive negotiation tactics. Women by contrast, with more interconnected self-schemas, may be less willing to employ negotiation strategies that could potentially damage relationships between individuals. In simple terms, this may mean that women are more focused on the avoidance of conflict and the search for more collaborative solutions to problems. This may require additional creativity on the part of female negotiations. Similarly, avoidance of direct conflict may mean taking a less assertive or self-interested approach than would male negotiators in a similar situation. Based on this speculation, we present two hypotheses related to how all-male, all-female, and mixed-gender groups differ in their negotiation styles.

Hypothesis 3: *All-male groups will exhibit negotiation styles that are more conflictual, assertive, reciprocal, and self-interested, as well as less collaborative and creative than the other two types of groups.*

Hypothesis 4: *All-female groups will exhibit negotiation styles that are less conflictual, assertive, reciprocal, and self-interested, as well as more collaborative and creative than the other two types of groups.*

Lastly, the differences between males and females in their approaches to conflict are not only limited to the behavior of negotiators. When men and women play the role of mediator, their core gendered attitudes toward human interactions may be manifested in a manner that changes the negotiation process, altering how issues are managed and which negotiation styles are used. This claim is put forward in Hypothesis 5.

Hypothesis 5: *Simulations mediated by female facilitators will exhibit less use of conflictual, assertive, and self-interested negotiation styles and make more use of collaborative and creative negotiation styles than simulations mediated by male facilitators.*

[14] It is worth noting that one of the isolated data points that led us to pursue this line of research came up in an early simulation debriefing with a group of middle school student participants. During the debriefing, the students guessed the gender of each simulation's Simcon, even though they had no direct way to ascertain the gender of the Simcon who facilitated their simulation. This suggested to us that perhaps gender was working both ways in the process, that male and female Simcons approached their task in gendered ways.

[15] This examination of Simcom gender is a ''first cut.'' As a result, this analysis focuses on establishing or rejecting the hypothesis that negotiator behavior changes given differences in the gender of Simcon. If Hypotheses 2 and 5 are supported, this opens the door to further analysis of why this difference exists. Future projects are planned that will seek to disentangle what about the gender of Simcon leads to differences in negotiator behavior. These differences could be driven by levels of engagement by different Simcon's or by the tone and approach taken by Simcon.

Methodology

The following analysis proceeds in two complementary stages as we attempt to test the hypotheses specified above. Our analysis follows from Caprioli (2004), who argues for the value of aggregate quantitative methods in testing the constructs put forth in the gender studies field. The first portion attempts to test Hypotheses 1 and 2 by examining the impact of gender groupings and facilitator gender on the aggregate volume of interaction that takes place. The unit of analysis in this first phase is the country-team issue group comprised of 3–5 students. Group behavior is measured in terms of numbers of messages sent over the course of the simulation. To test these hypotheses, OLS regression is used.[16]

The next section tests Hypothesis 3 through Hypothesis 5 using binary logit models to discern differences in the type of negotiation behavior.[17] The unit of analysis for this second phase remains the group; however, group behavior is measured in a different manner. In the first phase, group behavior was represented by a single measure, number of messages sent. In the second phase, each of those messages is examined as a separate opportunity for groups to use one or more of the six distinct negotiation styles. The several hundred groups examined produced thousands of messages, each of which is treated as a distinct observation of the group's behavior.

The OLS and logit models use different dependent variables: number of messages and use of negotiation styles, respectively. Both analyses, however, use similar independent variables to explain group behavior. The effect of different gender combinations is captured by two dichotomous variables for all-male and all-female groups. These dichotomous variables should be interpreted in relation to the constant term, which reflects the average number of messages sent by mixed-gender groups. In addition to the gender distribution of the group, the gender of the simulation facilitator is also included as a dichotomous variable for a *female* Simcon. Lastly, for the logit models, the number of messages sent by a group over the course of the simulation is included as a control. One set of controls that is not included in the analysis below is the simulation issue area. These controls were included in earlier drafts, but the controls, surprisingly, contributed little to the statistical models. For purposes of parsimony, issue area was left out of subsequent versions. The ability to include additional controls is limited in part by the constraints associated with the simulation framework and also by the constraints of conducting IRB-approved research on minors.

Before turning to the statistical analysis, it is important to address two conceptual issues related to the analysis of the data. First, studying group behavior presents a conceptual challenge. Given the wide geographic dispersion of participating schools, it is usually not feasible under the GlobalEd simulation environment to observe the inner workings of group interactions. Consequently, the coding of groups into ''all-male,'' ''all-female,'' and ''mixed-gender'' potentially misses important intra-group dynamics, especially when factoring in issues of relational aggression within small groups. At this point, however, we can only speculate on those dynamics based on some anecdotal

[16] The data examined here is count data. Ordinary Least Squares (OLS) regression should be used with caution when examining count data because of the possibility of right censoring at 0. This is not the case in this situation. All groups sent multiple messages; consequently, the OLS assumption of normally distributed error terms is met. In this instance, OLS regression is a viable option and is adopted because of its relative simplicity in the interpretation of coefficients.

[17] Logit estimates become less reliable when studying ''rare'' events, in which the number of zeros (non-occurrence) in a dependent variable is far greater than the number of ones (occurrence). We follow the recommendations made by King and Zeng (2001a, 2001b) for studying rare events using a modified form of the logit model.

teacher feedback. This is unavoidable given the dual role that GlobalEd plays as a research framework and as an educational platform, but it is important to make this clear from a methodological standpoint.

The second important conceptual issue is that there are important physiological and psychological differences between middle school and high school students. For this reason, we conduct separate analyses for the two groups. In theory, this should allow us to observe differences in how gender operates among middle school and high school students. One risk of this division is that middle school and high school students are still rather heterogeneous categories. Adolescence involves a complex set of physiological and psychological changes, and this process is not neatly delineated at the transition from middle school into high school. None of these conceptual issues are insurmountable, but highlighting the limitations of a research design is important in building transparency into the research process.

Results and Analysis

Message Volume

Hypothesis 1 predicted that female negotiators would be more active in negotiations relative to their male counterparts. Our data partially bears this hypothesis out. The mean number of messages sent by all-female groups over the course of the simulation is 18.03. This is dramatically larger than the mean number of messages sent by all-male groups, which was just under 12 messages. Disaggregating these numbers between middle school and high school students and controlling for the gender of Simcon, shows that a similar pattern is present for both age groups. Among high school students the difference is statistically significant. Among middle school students, girls appear to send slightly more messages, but the gender effect is not statistically significant (See Table 1).

An examination of the predicted number of messages sent by each group based on the OLS regression analysis in Table 1, reveals an interesting difference between the middle school and high school participants.[18] Among middle school participants mixed-gender groups are predicted to send on average 15.5 messages. The all-female middle school groups are predicted to send slightly more messages, and all-male middle school groups are predicted to send on average 12.8 messages. Neither of these differences is statistically significant in the middle school simulations. In the high school simulations, mixed-groups are predicted to send 14.6 messages on average. Predicted values for all-female groups are slightly more than this (16.9), but the difference is statistically negligible. The similarity between the all-female and mixed-gender groups in the high school simulations is particularly noteworthy considering the predicted message volume for all-male groups in the high school simulation is a mere 8.6 messages, which is statistically lower than the mixed-gender or all-female groups in the high school simulation.

We argue that this finding may indicate that girls have an important impact on the interaction within mixed-gender groups, particularly among the older participants in the simulation. In other words, the introduction of women into a decision-making environment can substantially alter the behavior of the group. Without the female voices, there appears to be less emphasis placed on interaction. Unfortunately, we did not collect data from individual classroom teachers on their observations of the impact of females on the interactions of

[18] The following predicted values assume that the Simcon gender is male. Given that a female Simcon significantly increases message volume, the predicted values are somewhat lower than the unconditional levels of message volume presented in the previous paragraph.

TABLE 1. OLS Regression of Gender and Message Volume

	Middle School	*High School*
Simcon gender	−1.493 (1.505)	7.112*** (1.706)
Male group	−2.7 (1.885)	−6.001** (2.103)
Female group	−0.324 (1.741)	2.348 (2.059)
Constant (Mixed gender)	15.493*** (1.284)	14.573*** (1.518)
R^2	0.016	0.105
N	206	287

*$p < .05$; **$p < .01$; ***$p < .001$.

mixed-gender groups, so we currently have no way to examine the exact dynamics of mixed-gender, intra-group interactions.

Hypothesis 2, which predicted that female Simcons would elicit greater levels of activity, is also partially supported by the results in Table 1. Among middle school students, a female Simcon has no systematic effect on the number of messages sent. The story is quite different for high school students, where each group is likely to contribute an additional 7.11 messages to the negotiation process when Simcon is female. This is an important effect in that the impact of a mediator's gender may be equally as important as the inclusion of women in negotiations. The reader should note that the participants do not know the gender of the Simcon during the simulation.

Lastly, it should be noted that the differences between the middle school and high school simulations is an interesting part of the story. The assumption from which we began was that the effects of gender would be strongest among middle school students, yet gender has the stronger effect among older students from the perspective of frequency of interaction. To speculate from our knowledge of simulation management, this may be an artifact of Simcon's role in interaction with groups of students with a ''higher'' knowledge base in the high school setting. Put simply, Simcon may play a more detailed role in facilitating substantive interactions among students with more sophisticated proposals and exchanges.

Gender and Negotiation Style

Moving to the next phase of the analysis, a series of logit models were used to test Hypothesis 3 through Hypothesis 5. The results of the seven logit models are presented in Table 2A,B. Again, it should be noted that for purposes of interpretation the effects of dummy variables, such as male group or female group, are relative to the absent category, which in this case is the mixed-gender group. A brief overview of Table 2A,B shows a number of statistically significant relationships. Because logit coefficients are less intuitive than OLS coefficients, we attempt to make the differences across groups more transparent by estimating the predicted percentage of messages that would employ a particular negotiating strategy (see Table 3A,B).

It should also be noted that although many of the substantive differences in Table 3A,B appear small, they are quite important when put in context. Of the seven different negotiation styles, the collaborative negotiation style is far and away the preferred approach for male, female, and mixed-gender groups (see Figure 2). This is true for both middle school and high school simulations. As noted earlier, the overwhelming preference for cooperative negotiation styles may reflect the structural biases of the GlobalEd simulation environment, but it may also reflect the shared attitudes and beliefs of the

TABLE 2. Gender and Negotiation Styles. (A) High School Simulation (B) Middle School Simulation

	Collaboration	*Conflictual*[a]	*Reciprocal*[a]	*Self Interested*[a]	*Assertive*	*Creative*[a]	*Multiple*
(A) High school simulation							
Female Simcon	0.009	0.826***	0.709**	0.3	0.605***	−0.073	0.341***
	(0.062)	(0.167)	(0.228)	(0.198)	(0.071)	(0.119)	(0.078)
Male team	0.005	0.138	−0.046	−0.168	0.095	0.206	0.07
	(0.082)	(0.185)	(0.297)	(0.252)	(0.089)	(0.154)	(0.097)
Female team	−0.392***	−0.85***	−0.134	−0.139	−0.097	−0.068	−0.384***
	(0.065)	(0.176)	(0.233)	(0.225)	(0.072)	(0.136)	(0.084)
Message volume	0.002	0.01**	−0.005	−0.036***	−0.006**	−0.014**	−0.006**
	(0.002)	(0.004)	(0.006)	(0.007)	(0.002)	(0.004)	(0.002)
Constant	0.113	−3.705***	−4.106***	−2.873***	−1.072***	−2.229***	−1.277***
(Mixed gender)	(0.069)	(0.202)	(0.282)	(0.221)	(0.0787)	(0.148)	(0.086)
Log-likelihood	−3473.9	−937.9	−520.6	−549.3	−3016.3	−1211.1	−2567.1
Chi-square (χ^2)	39	60.28	10.4	35.6	80.6	25.9	52.1
Prob. > χ^2	0.000	0.000	0.035	0.000	0.000	0.000	0.000
N	5043	5043	5043	5043	5043	5043	5043
(B) Middle school simulation							
Female Simcon	0.33***	0.15	−0.206	0.0677	0.022	0.488***	0.32***
	(0.077)	(0.173)	(0.146)	(0.142)	(0.081)	(0.121)	(0.082)
Male team	−0.075	0.729***	0.015	0.285**	0.113	−0.224	0.086
	(0.099)	(0.199)	(0.174)	(0.169)	(0.104)	(0.167)	(0.106)
Female team	0.312***	−0.067	−0.494**	−0.408**	0.117	−0.114	0.07
	(0.086)	(0.216)	(0.173)	(0.179)	(0.09)	(0.138)	(0.092)
Message volume	−0.007**	−0.019**	−0.002	−0.018**	−0.017***	−0.007	−0.014***
	(0.003)	(0.008)	(0.005)	(0.006)	(0.003)	(0.005)	(0.003)
Constant	0.034	−2.759***	−2.222***	−2.107***	−0.373***	−2.104***	−0.622***
(Mixed gender)	(0.095)	(0.226)	(0.163)	(0.176)	(0.099)	(0.158)	(0.102)
log-likelihood	−1981.7	−564.9	−782.4	−758.8	−1837.6	−971.8	−1795.4
Chi-square (χ^2)	46.09	26.91	11.99	24.34	32.67	23.02	41.9
Prob. > χ^2	0.000	0.000	0.0174	0.0001	0.000	0.0001	0.000
N	2896	2896	2896	2896	2896	2896	2896

[a]logit coefficients have been adjusted as recommended by King and Zeng (2001b).
*$p < .05$; **$p < .01$; ***$p < .001$.

TABLE 3. Predicted Use of Negotiation Styles Across Different Gender Groups. (A) High School Simulation (B) Middle School Simulation

Type of Interaction	*Female (%)*	*Male (%)*	*Mixed (%)*	*Difference (Female − Male) (%)*
(A) High school simulation				
Collaboration	43.1	53.0	52.8	−9.9***
Conflictual	1.0	2.8	2.4	−1.7***
Reciprocal	1.4	1.6	1.6	−0.1
Self-interested	4.7	4.6	5.4	0.1
Assertive	23.7	27.4	25.5	−3.7
Creative	9.1	11.7	9.7	−2.5
Multiple	15.9	23.0	21.8	−7.1***
(B) Middle school simulation				
Collaboration	58.6	49.0	50.8	9.6***
Conflictual	5.6	11.6	6.0	−6.0***
Reciprocal	6.2	9.9	9.8	−3.7**
Self-interested	7.5	13.9	10.8	−6.4**
Assertive	43.6	43.5	40.8	0.1
Creative	9.8	8.9	10.9	0.9
Multiple	36.5	36.9	34.9	−0.4

*$p < .05$; **$p < .01$; ***$p < .001$.

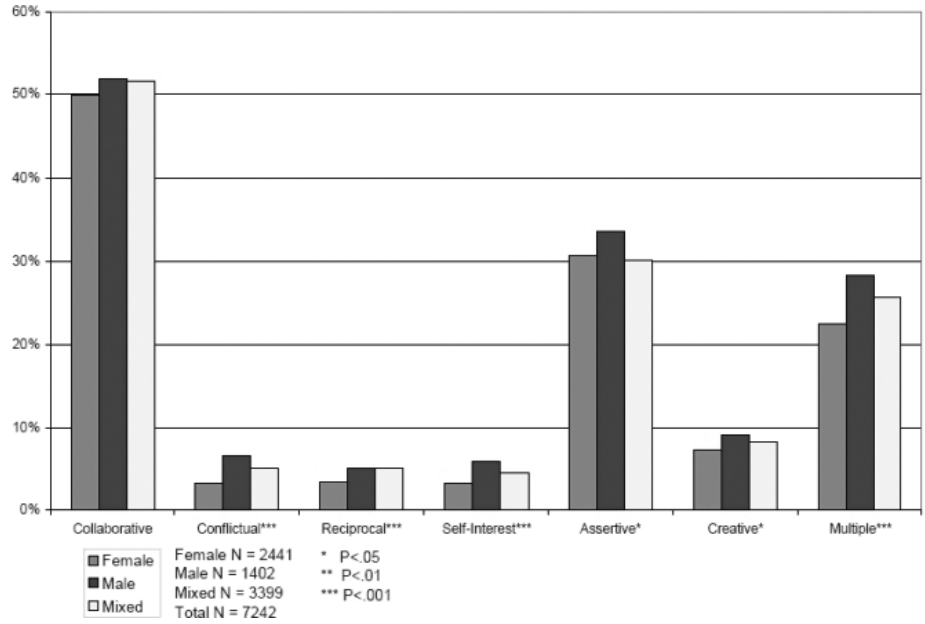

FIG. 2. Negotiation Styles Gender Breakdown (Both HS & MS Simulations 2001–2004)

individuals participating in the simulation.[19] Because many of the other negotiation styles are used less frequently, a shift of a few percentage points can represent an important finding. Furthermore, we argue that given the simulation's structural bias toward collaboration, the differences that are observed on the other non-collaborative categories may be more pronounced in real-world interactions than our results would suggest.

Hypotheses 3 and 4 predict that negotiation styles will reflect the divergent socialization and self-schemas of the male and female participants. Among middle school students, these predictions align basically as expected (see Table 2A,B). The female groups were statistically different in their negotiation styles from both the male groups and the mixed-groups in a number of areas. Female groups in middle school were 9.6 percent more likely to use collaborative negotiation styles. They were also 6 percent less likely to use reciprocal or self-interested approaches. In the use of conflictual negotiation styles, all-female groups did not differ from mixed-gender groups; however, all-male groups were significantly more likely to use conflictual negotiation styles. Male groups also were more inclined (+6.4 percent) to use self-interested negotiation styles than the mixed-gender groups. This pattern is roughly consistent with the expectations laid out in Hypotheses 3 and 4.

The differences across gender groupings for high school students do not map as closely onto Hypotheses 3 and 4. First, there were no statistically significant differences between the mixed-groups and the all-male groups. Second, the all-female groups were less likely to use conflictual negotiation styles than the male groups or the mixed groups, but they were also less likely to use collaborative negotiation styles and less likely to employ multiple

[19] We have also collected data on the Knowledge, Attitudes, and Beliefs (KAB) of simulation participants. While it is difficult to map individual attitudes onto group behavior, there is a strong sense among simulation participants that cooperative approaches are generally more desirable than more zero-sum approaches to negotiation. We are currently developing statistical methods for merging portions of the KAB data with the coded messages flows, but that work is not yet complete.

negotiation styles in a single message. The divergence from the outcomes of the middle school simulations adds further evidence to the notion that gender socialization is an ongoing process and that gender affects behavior changes in important, and complex ways from early adolescence into early adulthood.

We stress that these changes are complex, because they involve shifts not only in the behavior of all-female groups relative to all-male and mixed groups, but because there is also a convergence in the behavior of mixed-gender and all-male groups that takes place during this same period. The clear differences between all-female, all-male, and mixed-gender groupings in the middle school simulations suggest that the gendered interactions of male and female participants are tempering or canceling each other. In the high school simulations the female groups diverge from the behavior of male and mixed groups, but the male groups and the mixed groups employ the various negotiation styles at remarkably similar rates (see Table 3A,B).

There are at least two possible explanations for this. Perhaps by high school, the similarity between mixed and male groups results because females in mixed groups are less able to alter the behavior of their male counterparts. Alternatively, it is possible that by high school a genuine change has taken place among males, causing the male participants in the all-male groups to negotiate as they would have, if their group were of a mixed-gender composition. Without more detailed analysis of intra-group dynamics, it is impossible to say which process is at work; however, this observation opens up a potential avenue for future research.

The results of the statistical analysis partially support the predictions made in Hypotheses 3 and 4. This comes with some important caveats about how the impact of gender changes from the younger to older participants in the simulations. For the younger participants, gender appears to produce the expected outcome, where the girls are thought to be more focused on relationship building (collaborative negotiation styles) and boys are more outcome-oriented (self-interested, reciprocal, and conflictual negotiation styles). This expected pattern partially collapses for the high school simulation, where there is much less variation across the different gender groupings. This also conforms to previously cited studies that point to greater independence in identity by the time females reach high school age.

One additional finding of note that is not directly linked to gender is the general tendency of participants to use any negotiation style less as the message volume increases. In other words, as message volume increases across the simulations, there are more messages that are coded as ''empty'' in terms of the negotiation styles used. Examples of such messages include ones that are purely procedural in nature (e.g., ones that are sent to Simcon for a clarification) or ones that simply ask another country-team to expand a point or clarify their statements. This was almost universally the case for both the middle school and high school simulations. This hints that there may be a tradeoff in the simulation between frequency of interactions and the use of negotiation styles. In essence, this means that there is a tendency for some simulations to develop into ''interaction for the sake of interaction.'' That is, some aggregate groups of students evolve into ''talk, talk, talk'' with lower levels of substantive exchange. We will need to examine the tendency in the future to understand this dynamic within the simulations more fully.

Finally, Hypothesis 5 returns to the relationship between the gender of the mediator and the type of interactions that occur in the simulations. The statistical analysis presented in Table 2A,B is used to test the impact of Simcon gender on the use of negotiation styles. Table 4A,B presents in substantive terms the impact on the use of negotiation styles that result from shifting to

TABLE 4. Simcon Gender and the Predicted Use of Negotiation Styles. (A) High School (B) Middle School

Type of Interaction	*Female (%)*	*Male (%)*	*Difference (%)*
(A) High School			
Collaboration	53.0	52.8	0.2
Conflictual	5.3	2.4	2.9***
Reciprocal	3.2	1.6	1.6***
Self-interested	7.1	5.4	1.7
Assertive	38.5	25.5	13.0***
Creative	9.1	9.7	−0.6
Multiple	28.2	21.8	6.4***
(B) Middle School			
Collaboration	59.0	50.8	8.2***
Conflictual	5.9	6.8	0.9
Reciprocal	8.1	9.8	−1.7
Self-interested	11.5	10.8	0.7
Assertive	41.3	40.8	0.5
Creative	16.6	10.9	5.7***
Multiple	34.9	42.5	7.6***

*$p < .05$; **$p < .01$; ***$p < .001$.

a female Simcon from a male Simcon. This analysis shows that while there are statistically significant differences between male and female Simcons, the nature of the effect changes from the middle school to high school simulations.

In the middle school simulations, a female Simcon increases the probability that a message will manifest a collaborative negotiation style by 8.2 percent. Female Simcons also elicit more instances of creative (+5.7 percent) negotiation styles and increase the probability that groups will send messages using multiple negotiation styles by 7.6 percent. These are sizable increases, especially considering that the simulation participants are ''blind'' to Simcon's gender. During post-simulation debriefings, we have found that some student negotiators have correctly guessed the gender of the Simcon. Thus, it is possible that this ''presumed'' gender knowledge may have an impact on the negotiation interactions. We have not yet tested directly for that effect, however.

In the high school simulations, female Simcons also increase the probability that groups use various negotiation styles, but the negotiation styles that are affected differ from those in the middle school simulation. As with the middle school simulation, female Simcons elicit messages that make greater use of multiple negotiation styles; however, collaborative and creative negotiation styles are scarcely affected in the high school simulations. Rather, a female Simcon increases the probability that conflictual (+2.9 percent), reciprocal (+1.6 percent), and assertive (+13 percent) negotiation styles are used.

Based on the middle school and high school simulations, it seems clear that the gender of Simcon is an important factor in how simulations unfold. There are differences in which negotiation styles are most affected; however, this could be driven in large part by pedagogical considerations. The role of Simcon is different for middle school students, who may require more direction and encouragement than do high school students. In the high school simulations, Simcon may focus more on prompting participants to wrestle more fully with the issues and proposals being debated. Regardless of the actual cause of these differences, the empirical findings again point to a potentially interesting research agenda focusing on the impact of mediator gender on negotiations.

Summary and Conclusions

Over the past 20 years, a wealth of rich theoretical and conceptual work has been developed in gender studies. To date, with only a few notable exceptions, there has been little effort made to test the constructs of those studies with large N empirical data. One can argue that such efforts pull us away from the contextual richness that gender studies have provided over the years and that efforts to quantify such concepts are fraught with difficult measurement issues (see Tickner 2005). These are valid criticisms of quantitative methodologies in general, but they should not discourage the social scientist from trying to devise creative methodologies to examine the patterns of social interaction tied to gender. As such, we hope that our efforts have made strides in that direction, but we recognize there is still more work to be completed.

As part of our future agenda, we plan to develop a set of structured indicators for classroom teachers to fill out that will allow greater insight into the intra-group interactions of the mixed-gender groups. This would help us improve our understanding of how intra-group gender dynamics impact group behavior. This would be especially useful for better understanding the differences observed from middle school to high school. In addition to issues of intra-group dynamics, there is further work to be carried out in understanding how the gender of the mediator impacts the negotiation process. A more focused exploration of Simcon behavior could shed light on how gendered differences in mediation and facilitation styles affect negotiations.

Although this analysis has left a few stones unturned, it represents an important step in understanding general patterns of social interaction related to gender. The results presented above show significant support for our hypotheses. To summarize, the data suggest that all-male groups send fewer messages than all-female or mixed-gender groups. This difference was statistically significant for high school participants. The results of the logit analysis, although more mixed, also basically conform to our hypotheses. In middle school simulations, the all-female groups tended to be more collaborative, while the all-male groups were more conflictual. In the high school simulations, all-female groups seem to have moved away from cooperative strategies, while the all-male and mixed-gender groups became very similar in their approach to negotiations. Lastly, the results of our models demonstrate that the approaches used by women to facilitate interaction, even in a computer-mediated environment where the gender of the Simcon is unknown, have a statistically significant impact that changes the nature of interaction processes.

Interestingly, when we think about the potential implications of these findings, it does indicate that the addition of girls and women into decision-making settings may well have an impact on the process, even if we cannot conclude yet that it will make a difference regarding the *outcomes* of that process. Our analysis of the impact of female facilitation of interaction also bears out the divergent impact that males and females have on the volume of interaction, particularly for the high school simulations.

In sum, our results do suggest that gender plays a significant role in social and political interaction, at least as such interactions are manifest in our simulated negotiation process. These findings also indicate that as more and more women become actively involved in political decision-making, both the process and the types of interactions may change. Diversity in gender will thus bring with it diversity in viewpoints, and diversity in the ways we consider the issues at hand.

Appendix A

Negotiating Styles and Coding Prompts

Collaborative	**Self-Interested**
Principled/interest-based bargaining (see Fisher and Ury 1981)	Narrow self-interest
''Join together'' or ''work together''[20]	Makes it clear that country must look out for itself first
''Tell us what we can do''	Desire to protect national interest, culture, and identity
''Team up''	Wanting/needing a solution ''in order to compete''
''Willing to work with you''	Competing to lead the formation of alliances
Form an alliance	Competing for the distribution of resources
Melding, or incorporating different ideas/proposals	
Wanting every country's help or participation	
Open to negotiation, to hear ideas, suggestions	
Welcoming to different opinions	
Adaptive or flexible	
Conflictual	**Assertive**
Hard positional bargaining (see Fisher and Ury 1981)	Insistence/persistence of a certain idea or proposal
Competing, disputing, or disagreeing with a level of tension and/or nasty edge	Re-asserting one's position
Questioning a country's commitment to resolving the issue	''Pushing ahead''
Threatening or punishment-oriented statements (if you do/don't do this, then…)	Overall level of self-confidence in the message's approach
Reciprocal	**Creative**
Non-zero sum games (see Axelrod 1984); producing positive outcomes for those involved	Offering or proposing new ideas and solutions to the common problem
Willing to trade, make a deal	Element of optimism, inventiveness, resourcefulness, imagination
Motivated by getting something in return	Asking new and different questions about the problem at hand
If/then statements, incentive-oriented	

References

Alvarez, Sonia. 1990. *Engendering Democracy in Brazil: Women's Movements in Transition Politics*. Princeton: Princeton University Press.

Anderlini, Sanam N. 2007. *Women Building Peace: What They Do, Why it Matters*. Boulder, CO: Lynne Rienner.

Axelrod, Robert. 1984. *The Evolution of Cooperation*. New York: Basic Books.

Babcock, Linda, and Sara Laschever. 2003. *Women Don't Ask: Negotiation and the Gender Divide*. Princeton: Princeton University Press.

Baird, John E., and Patricia Bradley. 1979. ''Styles of Management and Communication: A Comparative Study of Men and Women.'' *Communication Monographs* 46: 101–111.

Barron, Lisa A. 2003. ''Ask and You Shall Receive: Gender Differences in Negotiators' Beliefs About Requests for a Higher Salary.'' *Human Relations* 56: 635–662.

Beer, Francis A. 2001. *Meanings of War and Peace*. College Station, TX: A&M Press.

Belenky, Mary F., Blythe M. Clinchy, Nancy R. Goldberger, and Jill M. Tarule. 1986. *Women's Ways of Knowing: The Development of Self, Voice and Mind*. New York: Basic Books.

Boyer, Mark A., Scott W. Brown, Michael J. Butler, Natalie F. Hudson, Paula R. Johnson, and Clarisse O. Lima. 2005. ''Understanding Security Through the Eyes of the Young.'' In *Guns and Butter: The Political Economy of International Security*, ed. Peter Dombrowski. Boulder, CO: Lynne Rienner.

[20] Please note that words in quotations are examples of direct quotes taken from simulation messages. All other bullet points refer to the overall content, style, tactics, and tone of message.

Britton, Hannah E. 2006. ''Continental Shift?'' In *Women in African Parliaments*, ed. G. Bauer, and H. E. Britton. CO: Lynne Rienner Publishers.

Cameron, Ardis. 1993. *Radicals of the Worst Sort: Laboring Women in Lawrence, Massachusetts 1860–1912*. Urbana: University of Illinois Press.

Caprioli, Mary. 2000. ''Gendered Conflict.'' *Journal of Peace Research* 37 (1): 51–68.

Caprioli, Mary. 2004. ''Feminist IR Theory and Quantitative Methodology: A Critical Analysis.'' *International Studies Review* 6 (2): 253–269.

Caprioli, Mary, and Mark A. Boyer. 2001. ''Gender, Violence and International Crisis.'' *Journal of Conflict Resolution* 45 (4): 503–518.

Cockburn, Cynthia. 1998. *The Space Between Us: Negotiating Gender and National Identities in Conflict*. New York: Zed Books.

Converse, Philip E. 1976. *The Dynamics of Party Support: Cohort-Analyzing Party Identification*. Beverly Hills, CA: Sage Publications.

Cooper, Joel. 2006. ''The Digital Divide: The Special Case of Gender.'' *Journal of Computer Assisted Learning* 22: 320–334.

Croson, Rachel. 1999. ''Look at Me When You Say That: An Electronic Negotiation Simulation.'' *Simulation and Gaming* 30 (1): 23–37.

Croson, Rachel, and N. Buchan. 1999. ''Gender and Culture: International Experimental Evidence from Trust Games.'' *AEA Papers and Proceedings* 89: 386–391.

Cross, S. E., and L. Madison. 1997. ''Models of the Self: Self Construals and Gender.'' *Labor Bulletin* 122 (1): 5–37.

Digeser, P. E. 1992. ''The Fourth Face of Power.'' *The Journal of Politics* 54 (4): 977–1007.

Druckman, Daniel. 2005. *Doing Research: Methods of Inquiry for Conflict Analysis*. Thousand Oaks, CA: Sage.

Druckman, Daniel, and Terrence P. Hopmann 2002. ''Content Analysis.'' In *International Negotiation: Analysis, Approaches and Issues*, 2nd edition. ed. Victor Kremenyuk. San Francisco: Jossey Bass.

Easton, David, and Jack Dennis. 1969. *Children in the Political System: Origins of Political Legitimacy*. Chicago: University of Chicago Press.

Eichenberg, Richard. 2003. ''Gender Differences in Public Attitudes Toward the Use of Force by the United States, 1990–2003.'' *International Security* 28 (1): 110–141.

Fisher, Roger, and William Ury. 1981. *Getting to Yes: Negotiating Agreement Without Giving In*. Boston: Houghton Milton.

Fite, David, Marc Genest, and Clyde Wilcox. 1990. ''Gender Differences in Foreign Policy Attitudes.'' *American Political Quarterly* 18: 492–513.

Florea, Natalie B., Mark A. Boyer, Scott W. Brown, Michael J. Butler, Magnolia Hernandez, Kimberly Weir, Lin Meng, Paula R. Johnson, Clarisse Lima, and Hayley Mayall. 2003. ''Negotiating from Mars to Venus: Gender in Simulated International Negotiations.'' *Simulation & Gaming* 34 (2): 226–248.

Fukuyama, Francis. 1998. ''Women and the Evolution of World Politics.'' *Foreign Affairs* 77 (5): 24–40.

GlobalEd Project. 2008. Available at http://www.globaled.uconn.edu. Mark A. Boyer and Scott W. Brown, projects directors, University of Connecticut.

Goldstein, Joshua. 2001. *War and Gender: How Gender Shapes the War System and Vice Versa*. Cambridge, UK: Cambridge University Press.

Guiller, Jane, and A. Durndell. 2006. '''I Totally Agree with You': Gender Interactions in Educational Online Discussion Groups.'' *Journal of Computer-Assisted Learning* 22: 368–381.

Gwartney-Gibbs, Patricia A., and Denise H. Lach. 1994. ''Gender and Work Place Dispute Resolution: A Conceptual and Theoretical Model.'' *Law and Society Review* 28 (2): 265–296.

Hudson, Natalie F. 2005. ''En-gendering UN Peacekeeping Operations.'' *International Journal* 60 (3): 785–807.

Hyde, Janet S. 2007. ''New Directions in the Study of Gender Similarities and Differences.'' *Current Directions in Psychological Science* 16 (5): 259–263.

Jackson, Richard. 2000. ''Successful negotiation in international violent conflict.'' *Journal of Peace Research* 37 (3): 323–343.

Kashima, Y., S. Yamaguchi, U. Kim, S. Choi, M. J. Gelfand, and M. Yuki. 1995. ''Culture, Gender and Self: A Perspective from Individualism-Collectivism Research.'' *Journal of Personality and Social Psychology* 69 (5): 925–937.

Katz, Ron, Yair Amichai-Hamburger, Efrat Manisterski, and Sarit Kraus. 2007. ''Different Orientations of Males and Females in Computer-Mediated Negotiations.'' *Computers in Human Behavior* 24 (1): 516–534.

King, Gary, and Langche Zeng. 2001a. ''Explaining Rare Events in International Relations.'' *International Organization* 53 (3): 693–715.

King, Gary, and Langche Zeng. 2001b. ''Logistic Regression in Rare Events Data.'' *Political Analysis* 9 (2): 137–163.

Kolb, Deborah M., and Gloria G. Coolidge. 1991. ''Her Place at the Table: A Consideration of Gender Issue in Negotiation.'' In *Negotiation Theory and Practice*, ed. William Breslin, and Jeffrey Z. Rubin. Cambridge, MA: The Program on Negotiation at Harvard Law School.

Maccoby, Eleanor E. 2002. ''Gender and Group Process: A Developmental Perspective.'' *Current Directions in Psychological Science* 11 (2): 54–58.

Markus, Gregory B. 1979. ''The Political Environment and the Dynamics of Public Attitudes: A Panel Study.'' *American Journal of Political Science* 23: 338–359.

Markus, Hazel R., and Shinobu Kitayama. 1991. ''Culture and the Self: Implications for Cognition, Emotion, and Motivation.'' *Psychological Review* 98: 224–253.

McCarthy, W. 1991. ''The Role of Power and Principle in Getting to YES.'' In *Negotiation Theory and Practice*, ed. William Breslin, and Jeffrey Z. Rubin. Cambridge, MA: The Program on Negotiation at Harvard Law School.

McDermott, Rose, and Jonathan A Cowdem. 2001. ''The Effects of Uncertainty and Sex in a Crisis Simulation Game.'' *International Interactions* 27: 353–380.

McGlen, Nancy E., and Meredith R. Sarkees 1993. *Women in foreign policy: The insiders*. New York: Routledge.

Merrills, J. G. 1991. *International Dispute Settlement*, 2nd edition. Cambridge: Grotius.

Project ICONS. 2008. Available at http://www.icons.umd.edu. Jonathan Wilkenfeld, project director, University of Maryland.

Peterson, V. Spike, and Anne S. Runyan. 1999. *Global Gender Issues*. Boulder, CO: Westview Press.

Raiffa, Howard. 1982. *The Art and Science of Negotiation*. Cambridge, MA: Harvard University Press.

Reis, Sally M. 1998. *Work Left Undone: Compromises and Challenges of Talented Females*. Mansfield Center, CT: Creative Learning Press.

Reis, Sally M. 2007. Personal communications with lead author. 28 October.

Ridgeway, Cecelia L. 1992. *Gender, Interaction, and Inequality*. New York: Springer-Verlang.

Ridgeway, Cecelia L. 1997. ''Interaction and the Conversation of Gender Inequality: Considering Employment.'' *American Sociological Review* 62 (2): 218–235.

Rothenberg, Paula S. 2007. *Race, Class, and Gender in the United States: An Integrated Approach*, 7th edition. New York: Worth Publishers.

Ruddick, Sara. 1990. *Maternal Thinking: Towards a Politics of Peace*. London: Women's Press.

Salla, Michael. 2001. ''Women and War, Men and Pacifism.'' In *Gender, Peace and Conflict*, ed. Inger Skjelsbaek and Dan Smith. London: Sage.

Sanchez, L. 1994. ''Gender, Labor Allocation, and the Psychology of Entitlement Within the Home.'' *Social Forces* 73 (2): 733–773.

Sapiro, Virginia, and Pamela J. Conover. 1993. ''Gender, Feminist Consciousness, and War.'' *American Journal of Political Science* 37 (4): 1079–1099.

Sell, Jane. 1997. ''Gender, Strategies, and Contributions to Public Goods.'' *Social Psychology Quarterly* 60 (3): 252–265.

Sell, Jane, W. I. Griffith, and Rick Wilson. 1993. ''Are Women More Cooperative than Men in Social Dilemmas?'' *Social Psychology Quarterly* 56 (3): 211–222.

Sharp, Paul. 1999. ''For Diplomacy: Representation and the Study of International Relations.'' *International Studies Review* 1 (1): 33–58.

Simmons, Rachel. 2002. *Odd Girl Out: The Hidden Culture of Aggression in Girls*. New York: Harcourt, Inc.

Surrey, J. L. 1987. ''Relationship and Empowerment.'' *Work in Progress*, 30, Stone Center Working Paper Series.

Taylor, Verta. 1999. ''Gender and Social Movements: Gender Process in Women's Self-help Movements.'' *Gender and Society* 13 (1): 8–33.

Tessler, Mark., and Ina Warriner. 1997. ''Gender, Feminism, and Attitudes Towards International Conflict: Exploring Relationships with Survey Data from the Middle East.'' *World Politics* 49 (2): 250–281.

Tickner, J. Ann. 1992. *Gender in International Relations*. New York: Columbia University Press.

Tickner, J. Ann. 2005. ''What Is Your Research Program? Some Feminist Answers to International Relations Methodological Questions.'' *International Studies Quarterly* 49 (1): 1–22.

Underwood, Marion K. 2003. *Social Aggression Among Girls*. New York: The Guilford Press.

United Nations (UN). 2000a. UN Security Council Resolution (S/RES/1325) On Women, Peace and Security. Available at http://www.peacewomen.org/1325inTranslation/English.html. (Accessed October 31, 2000.)

United Nations (UN). 2000b. Windhoek Declaration: The Namibia Plan on Mainstreaming Gender Perspectives in Multidimensional Peace Support Operations. Available at http://www.un.org/womenwatch/osag/wps/winhoek_declaration.pdf. (Accessed October 31, 2000.)

Weingarte, Helen R., and Elizabeth Douvan. 1985. ''Male and Female Visions of Mediation.'' *Negotiation Journal* 1 (4): 349–358.

Whitworth, Sandra. 2004. *Men, Militarism and Peacekeeping*. Boulder, CO: Lynne Rienner.

Wood, Wendy, and Nancy Rhodes. 1992. ''Sex differences in interaction.'' In *Gender, interaction, and inequality*, ed. Cecelia Ridgeway. New York: Springer-Verlag.