

Activism and Conservation Behavior in an Environmental Movement: The Contradictory Effects of Gender

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Various authors suggest that environmentalism differs by gender, but systematic empirical evidence for this assertion is limited. We compare women's and men's environmental activism and environmentally friendly behavior (EFB) using survey data from probability samples of three British Columbia forest conservation organizations (n=381). The data were primarily analyzed using OLS multiple regression analysis. Findings show no substantial gender differences in level of activism, but reveal that women engage in significantly higher rates of EFB. Further, while level of activism is not a significant predictor of EFB among men, it is the strongest predictor among women. Theoretical implications of these findings are discussed. Specifically, we argue that women may be more concerned about environmental issues and committed to environmentalism, but their limited biographical availability (e.g., personal constraints that present barriers to participation—as entailed in the demands of the “double day” of paid and domestic work) constrains their activism (McAdam 1986). However, because many environmentally friendly behaviors can be undertaken in the context of domestic labor and everyday routines, biographical availability does not constrain their EFB.

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Gender and Environmentalism

Unlike most other spheres of political life, women are well represented in environmental organizations. They belong to as many, if not more, formal and informal environmental organizations as do men (Tindall 1994). Around the globe women have led local environmental movements (Merchant 1992; Peterson and Merchant 1986). In North America, they have mobilized communities against toxic and hazardous waste and technological catastrophes such as Love Canal and Three Mile Island (Davidson and Freudenburg 1996; Levine 1982). In Canada, women have also been well represented in the leadership of environmental organizations (such as the Sierra Club, Greenpeace, and Friends of Clayoquot Sound) and movements dedicated to conserve wilderness areas and change forestry practices.

Research also suggests that women are generally more concerned than men about the environment. Specific findings are somewhat mixed, and are contingent on the type of issue being investigated, but studies tend to find that women express greater concern over potential environmental risks (Blocker and Eckberg 1989; Davidson and Freudenburg 1996; McStay and Dunlap 1983; Nelkin 1981; Van Liere and Dunlap 1980). Many argue that women are generally more concerned about environmental issues than men (Davidson and Freudenburg 1996; Van Liere and Dunlap 1980), and it has been inferred that women are thus more likely to participate in environmental movements (Mohai 1992).

Yet, beyond research on women's leadership and general concern, less is known about gender differences among rank-and-file members of environmental organizations, despite the fact that gender may be the most important mediator of the activist experience. Sociologists have amply studied differences between activists and nonactivists, but have paid less attention to gender differences among activists within the same movement (McAdam 1992, 1212). In particular, there is a dearth of research on how gender is related to environmental activism and behavior (Mohai 1992). Many scholars assume that women are more active than men among rank-and-file participants in environmental movements, but there is little systematic evidence for this assertion.

In this study we extend the literature on gender and environmental leadership and concern to compare women's and men's participation in a British Columbia environmental movement. Using data collected by the first author (Tindall 1994) we examine women's and men's levels of environmental activism and environmentally friendly behavior (hereafter EFB). By activism we refer to specific movement-supporting activities that are promoted by environmental organizations. By EFB we refer to everyday behavior that aims to conserve the environment in various ways. We investigate these primary questions: Are female members of environmental organizations more active than male members, and do these women engage in higher levels of EFB? These empirical questions are challenging because the relevant literature suggests that gender affects activism and EFB differently, and that the gender-activism relation is marked by cross-cutting forces. We elaborate the underlying rationale for these questions below.

First, gender may have different effects on activism versus EFB. The gender division of labor in both paid and domestic work is said to constrain the availability

of women for activism, since most activism tends to take place outside of the home. However, much EFB takes place through daily—and largely domestic and unpaid—activities, and women still do the majority of this work. Thus women may have more opportunities to engage in EFB than men.

Second, there may be contradictory effects of gender on activism. On the one hand, various strands of environmental sociology and ecofeminist theory suggest that women are more active than men for a variety of social, cultural, structural, and biological reasons. This literature prompts us to expect that women, especially mothers, will be more active and will engage in more activism. On the other hand, the social movements literature suggests various demographic factors that may impede women's involvement in environmental movements. Mohai (1992) and McAdam (1986), for instance, found men to be more active than women in various social movements because women's roles constrained their available time and commitments. In the next section we place these empirical questions within a larger theoretical framework.

Theoretical Framework

Our theoretical framework integrates three distinct lines of theory and empirical research: feminist sociology on gendered divisions of labor; environmental sociology on culture, demographics, and environmentalism; and social movement literature on micromobilization.

Gender Division of Labor and Environmentalism

Women in Canada (and other Western countries) have persistently earned less money than men even when other factors are controlled (Boyd 1998). Feminist sociologists highlight how these inequalities are maintained through the gendered division of labor and socialization. Men's superior access to high-resource-generating work roles in the economy fosters female dependence and compliance, allowing men to wield greater power in both the public and domestic spheres (Chafetz 1988). Women thus assume primary responsibility for household labor, particularly child care, giving employed women "a double day" (Armstrong and Armstrong 1984). Women continue to do a disproportionate amount of domestic work, even when they are employed full time (Devereaux 1992; Jackson 1996; Frederick 1993). Domestic duties make it difficult for women to compete with men for high-status jobs, and hence they tend to be channeled toward lower status jobs, or to withdraw altogether from the paid labor force. In general, this division of labor reinforces the dominance of men, giving them superordinate responsibilities, resources, and rewards (e.g., Marshall 1990a; 1990b).

This unequal division of labor spawns ideologies, norms, and stereotypes about the different competencies of men versus women (Chafetz 1988, 119). Since women are expected to make family obligations their highest priority, they are seen to be suited for jobs that require nurturing and social service, which on average are devalued and poorly paid. Meanwhile, "masculine occupations," seen to require competitiveness, rationality, and dominance behavior, are far better rewarded (Hartmann 1984; Chafetz 1988, 119). Because females and males are rewarded for conforming to these gender norms, and punished for deviating from them, these stereotypes reinforce the gender division of labor in both the economic and domestic spheres.

How, then, do gender differences in socialization and the division of labor connect to environmentalism? An essential irony is that females' hypothesized greater environmental concern is seen to be rooted in their marginal and subordinate position in the gender division of labor. North American culture and economy, some argue, encourage females to be ecologically benign, while making males ecologically destructive (Blocker and Eckberg 1989). Since women do more nurturing and caring work, both in the home and in their jobs, they are said to be implicitly socialized to value cooperation and concern for others (Van Liere and Dunlap 1980; Mohai 1992; Davidson and Freudenberg 1996). Conversely, the gender division of labor is said to motivate women to place less value on economic instrumentalism and competitiveness. According to this argument, women are more closely attuned to the environment because their roles place greater value on sharing, cooperation, and emotional support. They are said to be more concerned about environmental issues especially when there are health implications for their family. Men, in contrast, are socialized to be economic providers, and are said to therefore adopt a more instrumental, consumerist mentality toward the environment (MacDermid and Stevenson 1991).

Cultural and Demographic Influences on Environmentalism

If the gender division of labor fosters proenvironment concerns among women, how are these concerns channeled toward actual activism and conservation behavior? How might women's environmental attitudes be expressed? Environmental sociologists have examined the cultural underpinnings of new social movements, including the environmental movement, in the form of the rise of new values. According to Inglehart (1990), the political stability and economic security of the past several decades has spawned a shift from "materialist" to "postmaterialist" values among substantial segments of the populations in Western countries. Postmaterialists are said to emphasize quality of life, including quality of the environment, over issues like crime control and economic growth, and to place priority on democratic decision making, authentic personal relations, and the nurturing of new social identities. The affinity between the feminine concerns spawned by the gender division of labor (described earlier) and these postmaterial values lead us to expect that environmental activists, particularly women, will embrace postmaterialist values, and/or that these values will mediate the effects of gender on environmentalism.

Beyond fostering environment friendly attitudes, the gender division of labor may shape women's environmental participation in other ways. Demographic characteristics like motherhood status affect women's ability to participate in movements in contradictory ways. On the one hand, various strands of ecofeminist and environmental sociological theory hold that women more actively oppose life-threatening technologies, for a variety of health, moral, and ideological reasons (Nelkin 1981; Merchant 1992). Environmental sociologists pay particular attention to the role that parenting plays in heightening environmental awareness (Davidson and Freudenberg 1996). Further, empirical studies suggest that mothers, more than fathers, act on specific threats to their children's health (Hamilton 1985; Blocker and Eckberg 1989). Environmental sociologists attribute this to women's socialization into caring and nurturing roles in which they prioritize the health of their families, particularly their children (e.g., Blocker and Eckberg 1989; Brody 1984; Davidson and Freudenberg 1996; Hamilton 1985; Levine 1982; Merchant 1992; Nelkin 1981). We thus expect that women are especially prone toward environmental activism if they are also mothers.

On the other hand, parenting constrains one's time and availability for activism. Social movement researchers use the term "biographical availability" to denote how various life roles and duties shape one's ability to be active in movements (McAdam 1986). Personal constraints like full-time employment, marriage, and family responsibilities not only structure one's disposable time, they shape the costs and risks of movement participation. Because women do the majority of child care and other domestic work, their participation in social movements may face constraints, particularly if they are employed full-time. Domestic responsibilities may hinder women's time to participate in direct forms of activism such as developing organization strategies and tactics, and may relegate them to support roles like secretarial work. Mohai (1992), for instance, found in his study that despite the fact that women expressed greater concern for the environment, men were more likely to be activists. In sum, women's low biographical availability may cancel out the effects of proenvironmental concerns on their activism.

However, while this division of labor may hinder women's environmental activism, it may also boost their opportunities to engage in EFB. Since much EFB, such as taking public transit, recycling, or using a reusable mug, can be undertaken through daily routines at work and in the home, people with an environmental conscience can do them with relatively few extra costs. Thus EFB, unlike activism, is generally not constrained by biographical availability. Because women on average do a disproportionate share of domestic work, and since much EFB can occur in domestic work, women's position in the division of labor may reinforce their engagement in EFB.

Micromobilization

While it is commonly assumed that social movements attract people with shared beliefs, there are other determinants of participation. Promovement values and attitudes do shape an individual's identification with a movement, but they do not determine their initial recruitment or ongoing participation (McAdam 1986, Klandermans and Oegema 1987, Tindall 2002). Only a small proportion of sympathizers actually get involved. What appears to distinguish those who hold promovement values from those who actually get involved is contact with a recruiting agent.

The literature on micromobilization identifies factors that determine participation, such as network ties, frequency of communication, length of membership in a social movement, and level of identification with a movement (see Tindall 2002). The basic premise is that the more connected one is to other movement participants, the more active one will become. Such ties disseminate information, apply social pressure, and provide social support. Greater ties and frequent communication with movement participants allow one to learn about movement-related issues and activities, to identify with the movement, and to receive the types of pressure and information that spawn activism. The more often one talks with others about environmental issues, the more knowledgeable one becomes about environmental issues and events. Further, by interacting with like-minded individuals, one's own opinions, attitudes, and identity are reinforced, and this can strengthen commitment to a cause. These processes create the grounds for "interaction rituals" that reinforce a collective identity, and may serve to increase environmental activism and engagement in EFB. Indeed, these micromobilization variables have been shown to predict environmental activism (Tindall 1994; 2002).

Theoretical Models

Based on the theoretical and empirical observations described above we have developed two synthetic models: one explaining level of activism, and a second explaining level of environmentally friendly behavior.

Synthetic Model Explaining Level of Activism

We propose that socioeconomic and demographic factors (including gender, age, education, parenting, income) have both direct and indirect effects on level of activism.¹ It is also proposed that micromobilization factors such as social network embeddedness (e.g., ties to other movement participants) and network-based processes (e.g., frequency of communication, and level of movement identification) also have both direct and indirect effects on level of activism.²

In the model depicted in Figure 1 there are three blocks of intervening theoretical variables: (1) biographical availability, (2) proenvironmental values, attitudes, and concerns, and (3) commitment to environmentalism. With a minor exception (support for postmaterialist values), we do not have empirical indicators of these intervening variables.³ Thus the regression analysis focuses on the direct effects of the independent variables (not on indirect effects).

As gender is central to the analysis, we more fully describe the theoretical relationship of this variable to others in the diagram. Due to their different patterns of socialization and their differential experiences in the gender-divided labor force (in both the private and public spheres), women (compared with men) are more likely to hold proenvironmental values, attitudes, and concerns. This greater environmental concern has a direct positive effect on activism. Further, greater environmental concern also has an indirect effect on activism through its positive effect on commitment to environmentalism. On the other hand, because women do the majority of

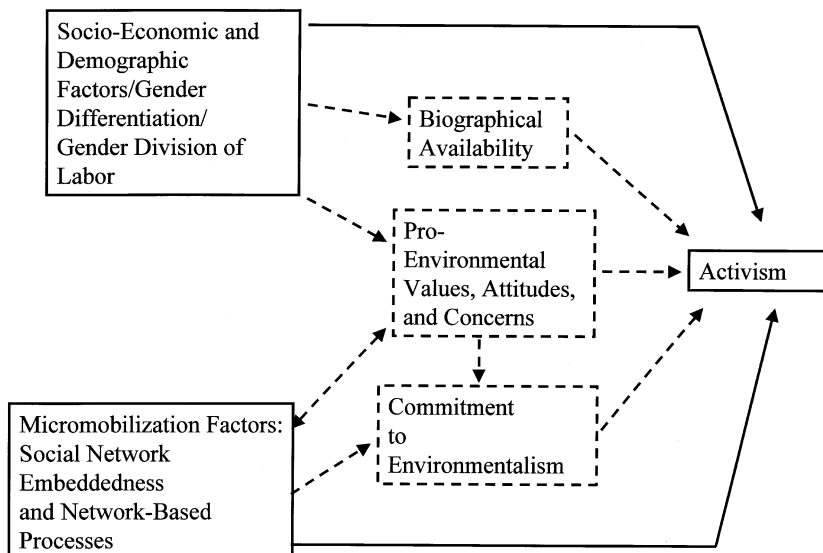


FIGURE 1 A synthetic theoretical model explaining level of activism. Solid boxes and lines indicate measured variables and relationships; dashed lines indicate theoretical variables and unmeasured relationships.

child care and other domestic work—even when they work full-time—they are less biographically available to participate in social movement activities. For women, the negative effect of (low) biographical availability may cancel out the positive effects of proenvironmental concerns and commitment. Thus it is uncertain whether women will be more or less active than men—it is an empirical question. In addition to gender (the central independent variable of interest), a set of additional demographic and socioeconomic variables, identified as being potentially important in past research, are included as controls.

The synthetic model also depicts relationships for the block of micromobilization variables. We expect having more network ties, talking with others about movement issues, and identifying with the movement promotes proenvironmental values, commitment to environmentalism, and hence more activism. Likewise, environmental values, attitudes, and concerns also have a reciprocal influence on the micromobilization variables; for instance, people who support environmental values are more likely to interact and form ties with other environmentalists.

Synthetic Model Explaining Level of Environmentally Friendly Behavior

The synthetic model explaining level of environmentally friendly behavior is illustrated in Figure 2. The rationale regarding the proposed relationships between socioeconomic and demographic factors and environmentally friendly behavior is largely similar for this model as for the earlier model explaining level of activism. However, there are some differences regarding the role of gender in the model.

The proposed relationship between EFB and gender is less ambiguous than for activism because several mechanisms ought to increase women's EFB, while none should constrain it—unlike the potentially negative effect of biographical availability on activism. Since EFBs can be undertaken in the context of every day paid and domestic work, biographical availability does not constrain EFB (and thus is

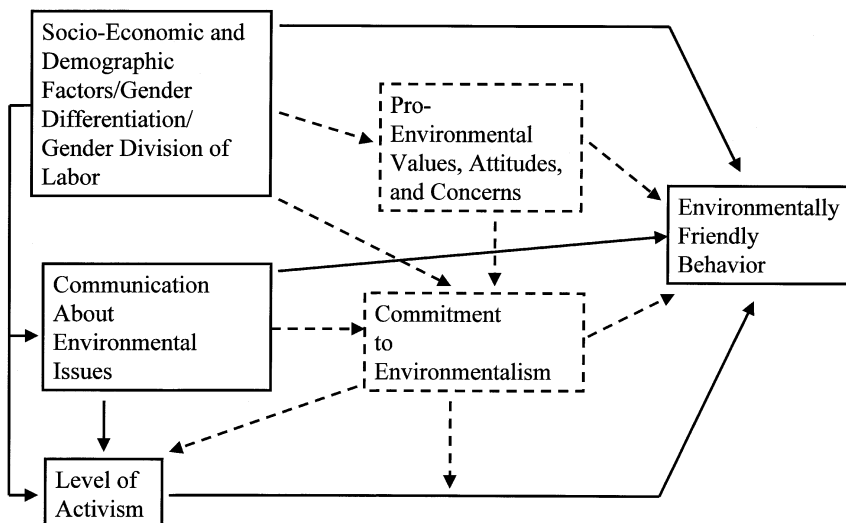


FIGURE 2 A synthetic theoretical model explaining level of EFB. Solid boxes and lines indicate measured variables and relationships; dashed lines indicate theoretical variables and unmeasured relationships.

omitted as an intervening variable in Figure 2). Further, because women do a disproportionately large share of the domestic labor and many EFBs can be undertaken in the context of such labor, women are likely to engage in a higher number of EFBs than are men.

In Figure 2, activism is included as an independent variable predicting EFB. The argument for using activism as an independent variable is rooted in cognitive dissonance theory (Festinger 1957), which assumes that people are motivated to be consistent, and to avoid inconsistencies either by changing their behavior or their attitudes. One form of consistency is to engage in conceptually related behaviors. Thus, level of activism and level of EFB ought to be positively associated. Also, since the environmental sociology literature posits that higher levels of environmental concern exist among women, we expect more consistency between level of activism and EFB among women than among men, because they should be more motivated to be consistent.

Research Questions and Analytical Strategy

We extrapolate from the literature on gender and environmentalism to investigate whether women are more active in a forest conservation movement, and whether they engage in higher levels of daily EFB. To examine these issues we conduct three types of statistical analyses.

First, we compare men's and women's scores, item by item, on measures of activism and EFB (described in the next section). Both the research and theoretical literature on environmentalism lead us to expect women to be more active in environmental activism, and to engage in more conservation behavior (EFB).

H1A. *Women will have a higher level of EFB than men.*

H1B. *Women will have a higher level of activism than men.*

Second, we explore whether gender has independent effects on activism and EFB that are net of the demographic, cultural, and network variables discussed earlier. It is possible, for instance, that while women may not be more environmentally active at the zero-order level, they may be more active once various constraining or enabling factors are controlled. Past research offers mixed findings. Mohai (1992), using data from a U.S. national survey, found that women expressed greater concern for the environment than men, before and after applying multivariate controls, though men were more active when independent variables were controlled. Conversely, McAdam (1992) found that women were more active in general social activism, net of the effects of other key independent variables. Because of these opposed findings, we investigate potential gender differences at both zero-order and multivariate levels.

H2A. *Net of the effects of other independent variables on EFB, women will have a higher level of EFB than men.*

H2B. *Net of the effects on other independent variables on activism, women will have a higher level of activism than men.*

Third, we investigate whether different variables predict activism and EFB among males versus females by running separate regression models by gender. Do men and women have different motives, opportunities, and constraints? McAdam (1992) found that different factors predicted general social activism during the 1960s in separate models for women and men. He reasoned that since women face greater

obstacles to participate than men, they needed more experience and commitment to be active. Likewise, Mohai (1992) found that different sets of variables predicted environmental activism among men, women homemakers, and employed women. Such findings imply that variables that predict activism and EFB may differ by gender because women have fewer resources, more constraints, and perhaps different priorities than men.

H3A. *The set of independent variables that explains EFB for women will be different from the set that explains EFB for men.*

H3B. *The set of independent variables that explains activism for women will be different from the set that explains activism for men.*

This study offers several unique contributions to the environmental sociology and the social movement literatures. First, most researchers measure activism in terms of whether or not individuals join and become members of an organization (e.g., Dauphinais et al. 1992; Mohai 1992). While useful, such indicators of activism conflate structure and behavior. We instead examine members' ongoing participation after they have already joined a movement organization (Tindall 1994). This separates structural indicators (organizational membership, network ties) from activism. Also, our measure is comprised of 17 indicators, and thus provides a more detailed measure of activism.

Second, on the relatively rare occasions when past researchers have examined ongoing participation, the measurement of the latter has been limited. Most studies use a dichotomous measure of ongoing participation/nonparticipation (e.g., McAdam 1986; Klandermans and Oegema 1987; Dauphinais et al. 1992; Mohai 1992). In contrast, we conceive activism as a continuum, ranging from nonparticipation to sustained and intense involvement in a variety of movement activities. To fully understand social movement activism, it is crucial to not only distinguish activists from nonactivists, but to also recognize a range of levels and forms of participation. We thus employ continuous measures of activism and EFB. To our knowledge no one else has measured conservation behavior as a continuous variable.

Third, studies of social movement participation tend to focus on high-risk and high-cost activism (i.e., activism that is time-consuming and/or entails risk of physical threat for arrest; e.g., Fernandez and McAdam 1988; Gould 1991; McAdam 1986). This article focuses instead on low-medium cost/risk activism, in which most rank-and-file movement participants engage on a regular basis. Finally, for reasons of clarity, we focus on participation solely within the environmental movement, which contrasts with research that examines activism across a variety of movements (e.g., McAdam 1992). In the next section we describe the context for this study, and then outline its data collection and measurement procedures.

Background: The Conflict Over Ancient Rainforests on Vancouver Island

This study examines members of three formal environmental organizations in Greater Victoria. Victoria is the capital of the province of British Columbia (BC) and is situated on Vancouver Island, off Canada's west coast. The province is home to a substantial proportion of the world's remaining old-growth temperate rainforests. These forests are highly valued by a variety of stakeholders, including Aboriginals, nature lovers, and forest-industry workers. In recent years a number of disputes have arisen over the plans of forestry companies to log old growth rain forests on western

Vancouver Island. During the late 1980s and the 1990s, environmental groups lobbied to have a number of these old growth forests protected as wilderness areas.

The three groups focussed upon in this study—the Sierra Club of Western Canada (SCWC), the Western Canada Wilderness Committee (WCWC), and the Carmanah Forestry Society (CFS)—are all formal environmental social movement organizations, and all have been central in the movement to protect and preserve old-growth rainforests in British Columbia. [For more details on the movement, and upon these organizations see Tindall and Begoray (1993) and Wilson (1998).]

Some of the activities undertaken by these groups include: organizing protest rallies on the lawns of the legislature in Victoria; holding public meetings and public slide show presentations; selling movement-related merchandise to raise funds (e.g., items like posters of old-growth trees, t-shirts, coffee-table books, coffee mugs, etc.) that promote wilderness conservation; lobbying bureaucrats and politicians; producing “educational” pamphlets and tabloids; and recruiting members and financial resources through door to door solicitation.

Methods

Data

The primary data source was a self-administered questionnaire mailed to members of the aforementioned environmental movement organizations in the Greater Victoria Area.⁴ For two of the groups a systematic random sampling procedure was employed. For a third, smaller organization, a census of members was conducted.⁵ Statistical analyses are based on an aggregate sample of 381 respondents in order to build the sample size. Our intergroup comparisons revealed no substantial difference, thus offering empirical support for this strategy.⁶

The response rates for the three groups were: Group A 35% ($n = 146$), Group B 35% ($n = 64$), Group C 11% ($n = 187$). While these are low in absolute terms, other social movement researchers obtain similar response rates (e.g., Muller and Opp 1986; Opp 1986; Opp and Gern 1993, 664.). Like these researchers, our focus is on theoretical relationships among variables, not parameter estimates for particular variables, so we expect these relationships to hold even for samples that are not necessarily representative.

Statistical Models

We have constructed two models: one for activism, and one for EFB. These models consist of several blocks of variables.

The first block contains gender, our focal independent variable, along with controls for age, education, and income. Here we are interested to see if the effects of gender are independent of other demographic and socioeconomic characteristics. Also, for the models predicting activism, “length of membership” is controlled.⁷ (In Tables 3 and 4, given later, we enter “parent” or “gender \times parent interaction” as a separate block, to see if there are effects for these variables once other variables are controlled.)

In the remaining block we add a number of intervening variables that may mediate the effects of gender. To take into account cultural factors, we add a measure of postmaterial values. To examine the effects of micromobilization factors

we add measures of ties to other movement participants, their frequency of communication, and level of movement identification.

In the models predicting EFB we add activism as an independent variable, and we drop some of the micromobilization variables that predict activism (e.g., ties to other activists, and level of identification) as well as the control variable “length of membership”—as these are only theoretically necessary for predicting activism. We drop unnecessary variables to provide parsimonious models, to prevent potential problems of multicollinearity, and to avoid watering down effects (which can occur when using relatively modestly sized samples).

Measures

Appendix 1 provides basic details on how all variables were measured, with means and standard deviations for ratio and interval-level variables, and percentages for categorical variables. (These statistics are based on the 219 cases with complete data.) More details about the measures (including theoretical rationales for the control variables) are provided at www.anso.ubc.ca/tindall/snr01/index.htm and can also be obtained by contacting the first author.

The two dependent variables, EFB and activism, were constructed using information based on field research, analysis of available materials, and interviews. The first author initially compiled lists of potential environmentally friendly behaviors and movement activities and conducted a pretest questionnaire. These lists were later modified based on feedback from movement participants. In the final version of the questionnaire, respondents were asked to check as many items as they had undertaken. These items were then used to build continuous scales for both EFB and activism.⁸ Tables 1 and 2 list the indicators used to construct both indexes, along with the percentage of women and men who had participated in each activity.

Results

Levels of EFB and Activism by Gender

Are women more environmentally oriented than men at the zero-order level? Table 1 reports the percentage of women and men who had participated in each of 14 environmentally friendly activities. We expected women to engage in more types of EFB, and indeed, our findings are broadly consistent with these expectations. While both women and men engage in rather high levels of EFB, an even higher percentage of women engage in many EFB activities. Indeed, the difference for five items is statistically significant. For women, the mean (11.0) for the EFB index is also significantly higher ($t = 2.14, p < .05$) than it is for men (10.4).

Table 2 reports the percentage of women and men who had participated in each of 17 different types of environmental movement activities. The results show little difference between women and men for most of these activities. In fact, where there are statistically significant differences, men are more active in four out of five cases. The mean for men (5.3) was higher than for women (4.8) for the overall level of activism index, but the difference was nonsignificant.

Multiple Regressions for EFB and Activism, Full Sample

Are women more environmentally oriented than men, after controlling for key variables? We next investigate the effects of gender on environmentalism in

TABLE 1 Environmentally Friendly Behavior by Gender

Type of activity	Women (<i>n</i> = 194) % Yes	Men (<i>n</i> = 177) % Yes
1. Recycle at home.	98.5	95.5
2. Recycle at work.	75.8	76.6
3. Regularly walk, bicycle, or take public transit instead of a car.	75.3	77.4
4. Refuse unnecessary packaging or plastic bags.	89.7	83.6
5. Conserve energy.	94.3 ^a	88.7 ^a
6. Buy organic produce.	72.2 ^a	62.2 ^a
7. Use environmentally friendly household cleaning products	90.7 ^b	81.9 ^b
8. Regularly reuse or mend things instead of discarding them.	93.8 ^a	86.4 ^a
9. Plant trees.	63.9	58
10. Pick up litter.	88.1	85.9
11. Use a reuseable mug instead of paper or styrofoam cups for beverages.	94.3	89.3
12. Help to maintain parks or natural habitats.	43.3	49.2
13. Composte organic waste.	86.6	80.2
14. Other behaviors designed to protect the environment (please describe).	36.1 ^b	24.3 ^b

^aSignificant at $p \leq .05$.

^bSignificant at $p \leq .01$.

multivariate models. Table 3 reports multiple-regression results for EFB. In the first model (column 1) gender has a significantly negative coefficient ($b = -.11$, $p < .05$). Corroborating the zero-order analyses given earlier, this indicates that women engage in more EFB than do men, even controlling for their age, education, and income. Model 2 introduces the parenting variable and indicates that women still engage in greater EFB, whether or not they are mothers. The third model adds other mediating variables. While we find that frequency of communication and activism have expected strong effects on EFB (boosting the explained variance to .19), the gender coefficient remains unchanged. This suggests that women engage in more EFB than do men, even controlling for their activism and frequency of communication. Models 4 and 5 substitute a measure of mother status ("gendpar") for gender, but this variable has the same-sized coefficient (.12) as did gender in the previous model. This suggests that mothers engage in more EFB, but this variable does not increase the explanatory power of the model.

Overall, Table 3 indicates that women engage in more everyday environmentally friendly behaviors even after controlling for key variables. While members who are younger, more educated, more active, and who communicate more about environmental issues engage in significantly more EFB (findings that are all consistent with the theoretical model), women engage in more EFB even controlling for these effects. (It should also be noted that income is marginally significant; people with lower incomes engage in more EFBs.)

TABLE 2 Participation in Movement Events by Gender

Type of activity	Women (<i>n</i> = 195) % Yes	Men (<i>n</i> = 177) % Yes
Donate/spend money in support of the movement.		
1. Donate money to a wilderness preservation or other environmental organization.	89.7	86.4
2. Purchase a book, t-shirt, poster, mug, or other merchandise from an environmental organization.	74.9 ^a	63.8 ^a
Sign petitions and write letters.		
3. Write a letter to a government official regarding a wilderness preservation issue (such as preservation of the Carmanah or Walbran).	58.5	59.9
4. Write a letter to a newspaper about wilderness preservation (or forestry-related issues).	16.9 ^b	28.8 ^b
5. Write a letter to a logging company about a forestry (or wilderness) issue.	12.8	14.7
6. Write a letter to another organization regarding a wilderness preservation issues.	14.9	16.9
7. Sign a petition to preserve a wilderness area.	73.8	76.3
Attend publicly held movement events.		
8. Attend a community meeting about wilderness preservation and/or forestry.	39	45.8
9. Attend a rally or protest demonstration on the lawns of the legislature to support wilderness preservation.	28.2	33.9
Participate in educational and publicity focused events.		
10. Participate in an information campaign for the general public about wilderness preservation.	18.5	21.5
11. Advertise in the media to promote wilderness preservation.	4.1	7.9
12. Give a lecture on wilderness preservation and/or logging practices to a school group or voluntary organization.	6.7	10.7
13. Participate in a press release/conference (regarding wilderness preservation and forestry-related issues).	3.1 ^c	11.3 ^c
Serve as a presenter or representative to a public body.		
14. Make a presentation to a public body about wilderness preservation and/or forestry-related issues.	6.7 ^c	16.9 ^c
15. Serve as a representative on an advisory board formed around wilderness preservation or forestry-related issues.	3.1 ^c	10.2 ^c
Other forms of participation.		
16. Participate in trail building.	10.8	14.1
17. Other activities.	17.4	11.3

^aSignificant at $p \leq .05$.^bSignificant at $p \leq .01$.^cSignificant at $p \leq .005$.

TABLE 3 Standardized Regression Coefficients for Models Predicting Environmentally Friendly Behavior: Entire Sample

Independent variables	Model 1 (<i>n</i> = 254)	Model 2 (<i>n</i> = 254)	Model 3 (<i>n</i> = 254)	Model 4 (<i>n</i> = 257)	Model 5 (<i>n</i> = 257)
Gender (1 = male)	-.11 ^b	-.12 ^b	-.12 ^b	—	—
Age	-.23 ^d	-.22 ^d	-.14 ^b	-.24 ^c	-.16 ^c
Education (squared)	.20 ^d	.19 ^d	.14 ^b	.20 ^c	.15 ^b
Income (log)	-.08 ^b	-.08	-.11 ^a	-.09	-.12 ^b
Parent	—	.07	.07	—	—
Gender (female parent)	—	—	—	.12 ^b	.12 ^b
Postmaterialist values index	—	—	-.01	—	-.03
Frequency of communication (log)	—	—	.20 ^d	—	.19 ^d
Activism	—	—	.19 ^d	—	.18 ^d
<i>R</i> ²	.09 ^d	.09 ^d	.19 ^d	.11 ^d	.20 ^d
Adjusted <i>R</i> ²	.07 ^d	.08 ^d	.17 ^d	.09 ^d	.12 ^d

—, Variable not included in equation.

^aSignificant at $p \leq .10$.

^bSignificant at $p \leq .05$.

^cSignificant at $p \leq .01$.

^dSignificant at $p \leq .005$.

TABLE 4 Standardized Regression Coefficients for Model Predicting Environmental Activism: Entire Sample

Independent variables	Model 1 (<i>n</i> = 219)	Model 2 (<i>n</i> = 219)	Model 3 (<i>n</i> = 219)
Gender	.05	.05	.03
Age	-.25 ^c	-.25 ^c	-.14 ^a
Education (squared)	.11	.11	.08
Length of membership (log)	.37 ^c	.37 ^c	.16 ^c
Income (log)	.09	.09	.00
Parent	—	-.04	-.03
Postmaterialist values index	—	—	-.03
Ties (log)	—	—	.26 ^c
Frequency of communication (log)	—	—	.16 ^b
Level of movement identification	—	—	.35 ^c
<i>R</i> ²	.18 ^c	.18 ^c	.49 ^c
Adjusted <i>R</i> ²	.16 ^c	.15 ^c	.46 ^c

—, Variable not included in equation.

^aSignificant at $p \leq .05$.

^bSignificant at $p \leq .01$.

^cSignificant at $p \leq .005$.

Given these multivariate results for EFB, what about the effects of gender on activism? Table 4 provides a multiple-regression analysis predicting level of activism. Column 1 shows that the standardized beta coefficient for gender is small and nonsignificant. (The coefficients do not change when the control variable “length of membership” is excluded from the model—table not shown.) This contrasts with previous findings (reported in Table 3) regarding EFB. Thus, women are not more active in the movement than men once key predictors are controlled (e.g., age, education, length of membership, and income). Rather, activism is better predicted by age (younger members are more active) and length of membership (longer standing members are more active). In column two we add the variable “parent,” and it too is nonsignificant, indicating that parents are not less active than non-parents. In model 3 we add the rest of the independent variables. Youth are significantly more active, as are longer term members, those with a greater number of ties to other movement participants, those who communicate more, and those who identify more strongly with the movement.⁹

This noneffect of gender perhaps reflects the cross-cutting effects that are suggested in the literature. The processes that simultaneously motivate and yet constrain women may cancel out each other. That is, women’s commitment to environmentalism may be stronger, but their biographical availability is limited. (See unmeasured theoretical variables in Figure 1.) This interpretation is considered further in the discussion.

Separate Models of EFB and Activism for Men and Women

Do different processes predict environmentalism among men versus women? Table 5 presents separate multiple-regression models of EFB for men and women. Here we find some interesting contrasts. First, the final equation (Models 2 and 4) explains a far greater percentage of the variation for women (30%) than for men (8%). Second,

TABLE 5 Standardized Regression Coefficients for Models Predicting Environmentally Friendly Behavior by Gender

Independent variables	Men		Women	
	Model 1 (<i>n</i> = 131)	Model 2 (<i>n</i> = 131)	Model 3 (<i>n</i> = 123)	Model 4 (<i>n</i> = 123)
Parent	.00	.02	.14 ^a	.16 ^b
Age	-.28 ^c	-.21 ^c	-.18 ^c	-.11
Education (squared)	.17	.15	.20 ^b	.11
Income (log)	.04	-.01	-.14	-.18 ^b
Postmaterialist values index	—	.11	—	-.18 ^b
Frequency of communication (log)	—	.15	—	.21 ^b
Activism	—	.11	—	.28 ^c
<i>R</i> ²	.08 ^b	.13 ^b	.10 ^b	.34 ^c
Adjusted <i>R</i> ²	.05 ^b	.08 ^b	.07 ^b	.30 ^c

—, Variable not included in equation.

^aSignificant at $p \leq .10$.

^bSignificant at $p \leq .05$.

^cSignificant at $p \leq .005$.

among men, age has the lone statistically significant effect ($b = -28$, $p < .05$), as younger men are more likely to engage in EFB (this accords with past research on environmental concern; see Van Liere and Dunlap 1980). In contrast, the majority of independent variables have significant effects for women. Being a mother, having a lower income, supporting postmaterialist values, frequently communicating about environmental issues, and especially engaging in a higher level of activism all predict EFB among women. The income effect may indicate that highly committed women purposely adopt alternative lifestyles. Another interpretation is that as a result of the gender division of labor, women are disproportionately relegated to lower paying service-oriented jobs, and they engage in higher levels of EFB out of necessity.

Otherwise, what is important is that key mediating variables predict EFB among women. Women engage in greater EFB if they hold post material values, communicate frequently with others about environmental issues, and are more engaged in environmental movement activities. This suggests that EFB is not a mere by-product of their domestic burdens, but rather is purposive and structured by their broader involvement in environmentalism. Cultural values, communication, and activism, and not just their position in the gender division of labor, promote EFB among these women.

Table 6 reports separate multiple regression results for activism among males and females. In contrast to the models for EFB, most of the same variables predict activism among both men and women, and the amount of explained variance is similar. Contrary to our expectations, being a parent does not independently affect activism for either men or women (again, perhaps motivating and constraining factors canceled out each other). For both men and women, members who are younger, have ties to movement participants, frequently communicate about environmental issues, and identify strongly with the movement are more active.

In summary, this study of rank-and-file members of three mainstream environmental organizations has yielded four key findings. First, females engage in more

TABLE 6 Standardized Regression Coefficients for Models Predicting Environmental Activism by Gender

Independent variables	Men		Women	
	Model 1 (<i>n</i> = 119)	Model 2 (<i>n</i> = 119)	Model 3 (<i>n</i> = 106)	Model 4 (<i>n</i> = 106)
	Age	-.31 ^c	-.12	-.21 ^b
Education (squared)	.20 ^b	.10	.00	.02
Length of membership (log)	.35 ^c	.09	.40 ^c	.22 ^a
Parent	-.09	-.02	.02	-.05
Income (log)	.04	.02	.16	.03
Postmaterialist values	—	-.01	—	-.04
Ties (log)	—	.25 ^c	—	.28 ^c
Frequency of communication (log)	—	.15 ^a	—	.19 ^b
Level of movement identification	—	.39 ^c	—	.28 ^c
<i>R</i> ²	.20 ^c	.51 ^c	.16 ^c	.45 ^c
Adjusted <i>R</i> ²	.16 ^c	.47 ^c	.12 ^c	.40 ^c

—, Variable not included in equation.

^aSignificant at $p \leq .10$.

^bSignificant at $p \leq .05$.

^cSignificant at $p \leq .005$.

EFB, both at the zero-order and multivariate levels. Second, despite their greater level of conservationism, female levels of activism are not higher than their male counterparts at either the zero-order or multivariate levels. Third, similar variables predict activism among both men and women. Fourth, very different variables predict EFB among women than among men. In the final section we interpret these findings and place them in context of the environmental sociology and social movement literatures.

Discussion and Conclusion

Our finding that these rank-and-file women environmental movement members engage in more environmentally friendly behaviors than do men accords with theory and research that suggests that daily conservation concerns are more salient to women. On the surface, however, this result may appear puzzling in light of our second main finding: that despite women's higher levels of environmentally friendly behavior, they are not more active. Thus women demonstrated a greater degree of environmental concern in their conservation behavior without engaging in a correspondingly greater level of activism. Indeed, this finding may seem paradoxical, especially given the theoretical literature in environmental sociology and ecofeminism. How can these two findings be reconciled?

While these findings appear paradoxical on the surface, they are largely consistent with the theoretical models introduced earlier (see Figures 1 and 2). In the model predicting activism, there are both enhancing (e.g., proenvironmental values, etc.) and constraining (e.g., biographical availability) factors that mediate the relationship between gender and activism. However, because environmentally friendly behavior can be undertaken in the context of daily routines, the factors that constrain activism (e.g., biographical availability) do not have a similar effect on environmentally friendly behavior. Thus, from a theoretical standpoint, it is not surprising that there are contrasting gender effects on activism versus environmentally friendly behavior. In fact, the literature is somewhat ambivalent about a gender effect on activism. We made a somewhat bold prediction that women would be more active—partly so that we had a clearly stated hypothesis for statistical testing. However, as McAdam (1992), and Mohai (1992) have noted, there are conflicting pressures that affect women's activism. In particular, the constraining pressures rooted in the "double day" for women, as a result of the gendered division of labor, mute women's activism.

To elaborate, the women in our study may have been more concerned about the environment than were the men, but their lack of resources, beyond those we initially measured, may have constrained their activism. Indeed, the greater time women spent on household labor (and perhaps EFB) may well have reduced their time for activism, relative to men. It is quite possible that if we had accurate measures of the time spent on domestic labor and childcare, we could explain why women's environmental concern, expressed in their EFB, did not translate into greater levels of activism.

This interpretation is bolstered by some additional data that was collected by the first author. A second survey was conducted in 1998 among a subsample of participants ($n = 58$) from the original 1992 survey. This survey contained additional questions on hours of housework per week, and percentage of the total housework done by the respondent. Consistent with national trends (see Devereaux 1992; Jackson 1996; Frederick 1993), women in this subsample did an average of 12.83 more hours of housework per week than did men ($p < .05$) and performed 73% of

the total housework in their households ($p < .001$). This greater burden borne by women provides an explanation for their muted level of activism. For women, but not for men, there is a significant negative correlation between the percentage of the housework that they performed and their level of activism in 1998 ($r = -.36, p < .05$). In other words, the more housework women did, the less active they were. This supports our assertion that the greater amount of housework done by women constrains their level of activism, as highlighted by the theoretical concept of biographical availability.

This leads to a further question: If there are such barriers, why do they limit activism but not EFB? Part of our argument is that the domestic division of labor gives women a higher proportion of the household and childrearing activities, even when they are employed full-time in the paid labor force. Women in our sample indeed do more of the domestic labor, yet many conservation activities can be undertaken in the context of domestic labor and everyday routines. Thus, a partial explanation of this apparent paradox is that women still do the majority of this work (Devereaux 1992; Jackson 1996). EFBs such as buying organic produce or using environmentally friendly household cleaning products are undertaken more by women, regardless of their level of environmental concern. This interpretation is reinforced by our third important finding, namely, that being a parent predicts EFB among women but not among men, a finding that is consistent with past research on environmental concern (Davidson and Freudenberg 1996, 307). Since EFB is less affected by biographical availability than is activism, mothers can more easily express their concern about the environment through EFB.

A fuller explanation, however, examines how women's EFB is more than a mere by-product of their domestic duties. Rather, as suggested by our theoretical model, women's activism appears to reflect and reinforce their commitment to environmentalism, which in turn facilitates their participation in EFB. Among women, EFB was predicted by key movement variables such as level of activism, support for postmaterialist values, and frequency of communication about environmental issues. This suggests that their involvement in the movement, as much as their domestic responsibilities, motivates women to engage in EFB, and that this behavior is purposeful and intended. In contrast, the separate regressions suggest that for men, EFB is a relatively "private" act, less closely attuned to the quality and quantity of their publicly visible and organized activism. We speculate that female movement participants, more than their male counterparts, make connections between different types of environmentalism and experience these activities as mutually reinforcing. Their EFB, much more than men's, was linked to cultural values and movement activities, and this may illustrate how they strive to be consistent in these different dimensions of environmentalism.

Future research is needed to build on our theoretical arguments and findings. While gendered divisions in the worlds of paid and domestic labor clearly have consequences for both activism and environmental friendly behavior, these divisions of labor vary across time and space. Western countries have seen significant changes in women's roles over the past several decades, and gender roles and occupational opportunities vary in different countries. This suggests that future research should examine the variable ways in which environmentalism is linked to gender by examining if the effects explored here vary with changes in gendered tasks over time, and/or by conducting comparative research on communities/societies with different degrees of gendered divisions of labor.

A second potential avenue for future research is to examine the intervening variables in our theoretical model. In the present research these were largely unmeasured. Future research might focus on measuring the roles played by biographical availability; proenvironmental values, attitudes, and concerns; and commitment to environmentalism.

A third potential area for future investigation would be to examine the linkages between gender and social networks. Feld (1982) argued that the social structuring of activity leads people to develop relationships with others who are similar to themselves. Thus, we would expect that women would have a higher proportion of ties to other women in their personal networks. Building on our findings, future research might explore whether women perform more EFB largely because they are more likely to have more ties to other women.

Overall, our study echoes a conclusion that is increasingly widespread in environmental sociology: that women are more concerned about environmental issues, but this greater concern does not translate into higher levels of activism because of their lighter resources and heavier domestic responsibilities. While both men and women plot strategies for protecting the environment, women actually engage in more day-to-day conservation behavior and appear to make closer connections between various dimensions of environmentalism.

Environmental organizations might take note of these findings. Women's organizational membership is a resource that can bolster even the most mundane aspects of their environmentalism. If movements wish to change everyday patterns of consumption and to get individuals to take personal responsibility for environmental issues, targeting women is likely an effective strategy. To enable greater participation among women, environmental movements may wish to help provide child care for women volunteers and stress equity in the domestic sphere. Otherwise, the contradictory effects of gender may relegate many highly concerned females to playing supporting roles in environmental organizations.

Notes

1. Age, education, and income have been implicated in past research on environmentalism, and in the present analyses are included as control variables (see Tindall 2002).

2. The logic underlying the direct effects for some of the variables has already been described; but in some instances we have also conjectured that there will be direct effects because we have not obtained empirical measures of all of the potentially relevant intervening variables.

3. Support for postmaterialist values is a relatively limited indicator of "proenvironmental values, attitudes, and concerns," so we only examine its direct effect on the dependent variables, rather than exploring indirect effects. Also, for this reason, we depict the "proenvironmental values, attitudes, and concerns" block as a set of unmeasured theoretical variables in Figures 1 and 2.

4. Additional data were also gathered through face-to-face interviews with environmental organization officials, observations made at movement events, and collection of available documents—but these latter data are not central to the present analysis.

5. Specifically, systematic sampling with a random start was employed. The first element of the list was selected at random; then every k th person listed on the environmental organization membership list was selected.

6. There is a great deal of membership overlap between these organizations. This overlap, we feel, is sufficient to justify combining members from these three groups into a combined sample for the results reported here. Since our main focus is to understand individual differences, we do not provide separate analyses for these three organizations. This choice was supported by the results by the results of a series of regression analyses which included dummy variables for specific WPMO memberships to predict level of activism. When specific

WPMO membership is included in the full regression mode, it was nonsignificant and did not alter the significance of the other coefficients.

7. It is important to control for “length of membership” for the regression analyses explaining “activism” because the longer one is a member of the movement the higher their activism score potentially is (due to greater opportunities to participate in movement activities). Also, the longer one is a member of the movement, the more opportunities they have to develop ties with other movement participants (and thus the greater number of ties they potentially have). Thus, it is important to control for “length of activism” to ensure that the correlation between ties and activism is not spuriously related to time. (A similar argument can also be made regarding “level of identification.”)

8. Colleagues have borrowed these questionnaire items to construct similar indexes (e.g., Blake et al. 1997), and the first author has published using the activism index (see Tindall 2002).

9. As earlier analyses did not reveal a gender effect for level of activism, in Table 4 we do not include a second model examining a gender \times parent interaction effect.

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APPENDIX 1 Measurement of Variables

Variable	Mean/% (SD)	Description
Level of activism	5.36 (3.49)	Sum of 17 items of participation (where participation = 1, nonparticipation = 0 for each item). See Table 2 for a listing of the items.
Environmentally friendly behavior (EFB)	10.91 (2.57)	This measure is derived from the sum of 14 different kinds of environmentally friendly behavior (where for each type, participation = 1, nonparticipation = 0). See Table 1 for a listing of the items.
Age	43.41 (15.10)	Chronological age at the time of the survey.
Log of frequency of communication	1.61 (.68)	Respondents were asked to indicate from a list of categories how often they talk with someone about wilderness preservation and other environmental issues. This variable was log transformed for use in the regression analyses.
Education (squared)	248.39 (62.84)	Years of education. High school degree = 12, bachelor's degree = 16, etc. The value for education was transformed for the regression analysis by squaring.
Gender	54%	Dummy variable. Men = 1, women = 0.
Gendpar	11%	Dummy variable. Female parents = 1, others = 0.

(Continued)

APPENDIX 1 Continued

Variable	Mean (SD)	Description
Level of identification	2.25 (1.11)	Two questions were asked regarding how strongly the respondent identified themselves as a member of the wilderness preservation movement. Responses were combined to form an index for this variable.
Log of income	4.36 (.84)	Log transformation of total personal income in dollars during the year prior to the study.
Log of length of organization membership	.43 (.34)	Log transformation of number of years that the respondent had been a member of the environmental organization.
Parent	31%	Dummy variable: parent = 1, others = 0.
Support for materialist versus postmaterialist values	5.21 (1.34)	Respondents were asked to rank a series of "materialist" and "postmaterialist" values. An index of postmaterialist values was created by calculating a mean rank score for the postmaterialist items.
Log of ties	-.11 (1.29)	Respondents were asked to estimate the number of people they know from their organization that they can hold a casual conversation with. This variable was log transformed for use in the regression analyses.

Note. More details about the measures are provided at www.anso.ubc.ca/tindall/snr01/index.htm