

# Militarist, Marxian, and Non-Marxian Materialist Theories of Gender Inequality: A Cross-Cultural Test\*

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## *Abstract*

*This study tested three types of theories of gender inequality in preindustrial societies by using half the societies in the Standard Cross-Cultural Sample: militarist, Marxian, and non-Marxian materialist theories. The first phase of the research used simple cross-tabulations with chi-square as a test of significance and gamma as a measure of association. The results from this phase showed no support for militarist theories, some support for Marxian theories, and substantial support for non-Marxian materialist theories. Since the first phase involved no control variables, a second phase was conducted using multivariate analyses. These analyses confirmed that militarist theories must be emphatically rejected, and that both Marxian and non-Marxian materialist variables help determine gender inequality. Non-Marxian materialist variables, however, explain much more of the variance in gender inequality than Marxian variables do.*

Gender inequality has been a pervasive feature of human social life for millennia. There is widespread, although hardly universal, agreement that all societies have been to some extent male-dominated (Goldberg 1993; Rosaldo and Lamphere 1974). Be that as it may, it is clear that there is marked variation in the degree of gender inequality across societies. Explaining both the universal and the variable aspects of gender inequality is extremely important, but this article seeks to

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explain only the variable aspects. In doing so it tests three competing theories: militarist, Marxian, and non-Marxian materialist theories.

*Militarist theories* (Collins 1975, 1985; Divale and Harris 1976) hold that societies with frequent warfare, or preparation for warfare, are likely to be more male dominated than other societies. Societies regularly engaged in warfare train males to be fierce and aggressive and denigrate feminine qualities, out of which develops a culture of male supremacy. Using half of the societies in the Standard Cross-Cultural Sample (SCCS) of Murdock and White (1969), Whyte (1978) tested this theory and found that warfare was actually related to a higher rather than a lower status for women.

The first of several *Marxian theories* was proposed by Engels ([1884] 1970). Engels argued that in the earliest forms of human society women were equal with men. With the rise of social stratification and the state in social evolution, men gained control over private property and this came to be extended to control over women; as a result, women's status plummeted. Karen Sacks (1975) has elaborated on Engels's work. According to her, as societies moved from a communal mode of production to an incipient class mode, women were increasingly perceived as the property of men and became only indirectly related to the means of production. This gradual diminution of their importance to the means of production meant a gradual diminution of the economic power that women held in society, and hence a declining status. Whyte (1978) tested this overall argument with the data in the SCCS and found little empirical support for it. Hendrix and Hossain (1988), using the same sample but a larger number of variables, also found very little support.

According to *non-Marxian materialist theories*, ecological, technological, and economic factors are the most important determinants of women's status. The greater the extent to which women are involved in economic production, the higher their status tends to be (Blumberg 1984, 1991; Chafetz 1984; Martin and Voorhies 1975). Blumberg (1984, 1991) emphasizes that the key factor is women's level of economic power; the greater the extent of this power, the higher women's overall status. Non-Marxian materialist theories are similar to Marxian theories, except that the latter tend to emphasize the role of social class and stratification and the former do not. A number of Whyte's (1978) empirical analyses relate to this type of argument. For example, he found that the use of the plow strongly predicted a low female status, primarily because plow agriculture is one in which men predominate and women lose much of their productive role and thus their economic power.

Collins et al. (1993) have attempted to draw into a comprehensive, synthesized theory many of the factors of all three types of theory. Their laudable attempt results, however, in an extremely complex set of flow diagrams and models that would likely prove extraordinarily difficult if not impossible to test, especially with the data that are available. Indeed, they provide no empirical tests of their models.

## Hypotheses and Methods

### HYPOTHESES

We formulate three hypotheses that correspond to the three theoretical perspectives. Hypothesis 1 is derived from militarist theories:

*Hypothesis 1:* The greater the prevalence of warfare, the lower the status of women.

Hypothesis 2 is derived from Marxian theories:

*Hypothesis 2a:* The greater the control women have over the products of their own labor, the higher their status.

*Hypothesis 2b:* The greater the degree of stratification, the lower the status of women.

Hypothesis 3 is derived from non-Marxian materialist theories:

*Hypothesis 3a:* The greater the contribution of gathering to the total food supply, the higher the status of women.

*Hypothesis 3b:* The greater the contribution of women to overall subsistence, the higher their status.

*Hypothesis 3c:* In agricultural societies, the greater the contribution of women to agricultural labor, the higher their status.

*Hypothesis 3d:* In agricultural societies, the greater the intensity of cultivation, the lower the status of women.

*Hypothesis 3e:* In patrilineal societies the status of women will be lower than in nonpatrilineal societies.

*Hypothesis 3f:* In patrilocal or virilocal societies the status of women will be lower than in nonpatrilocal or nonvirilocal societies.

## Data

The data set used to test these hypotheses is Murdock and White's (1969) Standard Cross-Cultural Sample, which contains 186 pre-industrial societies. To make the SCCS a representative sample, Murdock and White divided the world into 186 regions and then selected one society from each of the regions. Region selection was intended to solve "Galton's problem" of cultural diffusion. Assuming that diffusion can and will occur when two cultures are in contact with each other, Galton's problem suggests that any sample could be biased by cultural diffusion. Murdock and White solved the problem by selecting regions that were separated by one or more significant geographical boundaries, boundaries that would limit or eliminate contact between neighboring societies. Within each region, the society

that was selected was the best documented society. This means that the SCCS is, strictly speaking, a nonrandom (but nonetheless highly representative) sample.

Anthropologists, missionaries, and others have recorded the information about the societies of the SCCS. All ethnographies were gathered prior to 1950 and in most cases before significant impact was made by modern societies. Controversy has surrounded the use of such data sets. Data quality differs from one society to another because of the different kinds of persons — missionaries, travelers, professional ethnographers, etc. — who were collecting the data, their motives for doing so, and their levels of competence. Data sets like the SCCS are still, however, widely used by anthropologists and some sociologists, and such studies have often produced compelling findings. We contend that the various measures used in this study have a high degree of face validity. For example, coding whether societies engaged in warfare, used the plow, or were patrilineal, and the like, are relatively straightforward constructs with meaningful indicators. The more problematic issue, in our view, pertains to the reliability of the measures. Our basic argument, however, is that, since reliability error attenuates correlation coefficients, if statistically and substantively significant findings emerge, then they actually underestimate the strength of the relationships discovered rather than distort the overall pattern of results. Overall, if the data were completely lacking in validity and reliability, then no significant relationships should be found.

In 1978, Whyte created gender status variables for the SCCS. In the interest of saving an enormous amount of time and effort, Whyte coded every other society starting with Nama Hottentot and concluding with Tehuelche until he had 93 with which to work (see Whyte 1978 for a list of the 93 societies he coded). Whyte then created a set of 52 dependent variables. For purposes of simplification, he reduced the number of dependent variables by using cluster analysis. This yielded 10 dependent variable scales. These scales are the ones Whyte used in his own research on women's status.

#### DEPENDENT VARIABLES

We used three of Whyte's dependent variable scales as measures of the status of women in preindustrial societies. These scales were chosen over Whyte's seven other scales for two reasons. First, they had the strongest correlations with the independent variables in Whyte's own empirical analyses, which suggest that they are the three best measures of women's status. Second, they most clearly operationalize the concepts in the theoretical categories that we test. We also summed the three measures to create a composite measure of gender inequality. The dependent variable scales are the following:

- (1) *Domestic authority of women*, which is a cluster of three dependent variables: final authority over infants, final authority over children, and lack of male dominance over wives. This scale has an average interitem

correlation of .375. It is coded low, medium, and high, where the higher the score, the more domestic authority women have.

- (2) *Ritualized female solidarity*, which is a cluster of five dependent variables: exclusively male work organizations, exclusively female work organizations, menstrual cycle taboos, female initiation ceremonies, and lack of a belief in female inferiority. This scale has an average interitem correlation of .247. It ranges from low to high, where the higher the score, the greater the ritualized separation between men and women.
- (3) *Control over women's marital and sexual lives* (referred to in this article as "male control over female sexuality"), which is a cluster of four dependent variables: lack of a premarital double standard, lack of an extramarital double standard, remarriage ease, and relative age at first marriage. This index of male control over female sexuality has an average interitem correlation of .242 and is dichotomized into stricter and less strict levels of control.
- (4) *Composite gender inequality variable*, which is a summed index of the other three independent variables (Cronbach's alpha = .41). We created this variable to strengthen the measurement of gender inequality by creating a more sensitive measure of gender status across societies. The validity of the composite measure is supported by its rather robust correlations with all but two of the Marxian and non-Marxian materialist variables. While the Cronbach's alpha is relatively low, even for a three-item measure, the result will be to underestimate the statistical effects of the independent variables rather than alter the pattern of results.

#### INDEPENDENT VARIABLES

Three variables from the SCCS data bank were used to measure warfare:

*Internal warfare*: Warfare fought in and around a society's own territories (trichotomized into infrequent, frequent, and continual).

*External warfare*: Warfare fought at considerable distances from a society's own territories (very low, low, moderate, high, very high).

*Overall warfare*: Operationalized as the average of internal and external warfare (very low, low, moderate, high, very high).

The Marxian hypothesis was measured by two independent variables:

*Female economic control of the products of their own labor* (absent, present).

*Class stratification* (egalitarian, wealth distinctions only, elite or dual, complex).

The non-Marxian materialist hypothesis and its subtypes were measured by the following independent variables:

*Percentage of the contribution of gathering to the food supply* (none, less than 10%, less than 50% and less than any other, less than 50% but more than any other, more than 50%).

*Subsistence type* (foraging, shifting cultivation with digging sticks, shifting cultivation with metal hoes, intensive agriculture without the plow, intensive agriculture with the plow).

*Percentage of the contribution of women to overall subsistence* (low, moderate, high).

*Percentage of the female contribution to agriculture* (0–10%, 20%–40%, 50%–60%, 70% or more).

*Intensity of cultivation* (no agriculture or casual agriculture, extensive cultivation or horticulture, intensive agriculture with or without irrigation).

*Use of the plow* (absent, present).

*Patrilineality* (yes, no).

*Patrilocal or virilocal residence* (yes, no).

#### DATA ANALYSIS

The data analyses were performed in two stages. First, we used ordinary chi-square tests as a test of statistical significance and gamma as a measure of association for bivariate analyses. Thirty-nine bivariate cross-tabulations were conducted to test the hypotheses, one for each combination of an independent and a dependent variable and each hypothesis. To control for potential spuriousness, in the second stage of the analysis we conducted a series of multivariate analyses, one for each of the original dependent variables. For the two dependent variables that were ordinal, domestic authority of women and ritualized female solidarity, we used ordered (proportional odds or cumulative) logistic regression. We also computed unordered multinomial logistic regression equations for comparison. For all models, significance tests suggested that the unordered multinomial logistic regression equations were unnecessary. Therefore, the models were recomputed using ordinary least squares regression and compared to the ordered logistic regressions. Because these models produced identical conclusions, the ordinary least squares regressions are shown for ease of interpretation. For the dichotomous dependent variable, male control over female sexuality, we used binary logistic regression. For the composite gender inequality variable, which ranged in value from 3 to 9, we used ordinary least squares regression.

## BUILDING THE MODELS

For all four dependent variables, we ran a series of ordered, hierarchical models with the warfare variables entered first into the model, followed by the Marxian variables, and then by the non-Marxian variables. Because of the small sample size, to preserve degrees of freedom and to minimize problems with multicollinearity, we used a stepwise approach by testing the effect of each independent variable in each block one at a time. Because of the small sample size and low power, we retained any independent variable that achieved a one-tailed significance level of  $p \leq .10$  (see Hosmer and Lemeshow 1989). Variables not achieving a significance level of .10 for entry were not included in the final models. Because the bivariate analyses gave no support for the warfare hypotheses, we entered warfare variables into the models first to give them the greatest opportunity to be included in the final models. We entered the Marxian variables next, because we wanted to give credit for any mutually (with other materialist variables) explained variance to the Marxian variables rather than to the non-Marxian materialist variables. This strategy provided the most conservative test of the non-Marxian materialist theories. We felt our ordered strategy was the most effective way to pit the three theories against one another. In a sense, non-Marxian materialist theories are not contradictory to Marxian explanations; they build upon Marxist explanations. Therefore, if non-Marxian materialist variables were not predictive above and beyond Marxian variables, then this would provide greater support for Marxian models and suggest other materialist variables are not necessary to understand gender inequality. However, if non-Marxian materialist variables were significant determinants of gender inequality after controlling for significant Marxian variables, we could conclude that Marxian theories by themselves are inadequate to explain gender inequality.

## Results

### PHASE 1: BIVARIATE RESULTS

#### *Militarist Hypothesis*

Table 1 shows the bivariate results that test the hypotheses. The results of the nine tests of the militarist hypothesis show that it must be emphatically rejected. All but one of the associations between warfare and gender inequality are not significant, and the one association that is significant is positive ( $\gamma = .54$ ;  $p \leq .01$ , between internal warfare and male control of female sexuality), which is in the opposite direction predicted by the militarist theory. In fact, five of the nine associations are in the opposite direction from that which was predicted. The assertion by Divale and Harris (1976) and by Collins (1975, 1985) that the

**Table 1. Bivariate Tests of the Militarist, Marxian, and Non-Marxian Materialist Hypotheses**

Theory/Hypothesis	Domestic Authority	Control of Sexuality	Female Solidarity
<b>Militarist</b>			
Internal warfare	.07	.54**	.16
External warfare	-.02	-.22	.11
Overall warfare	-.10	-.16	.17
<b>Marxian</b>			
Female economic control	.11	-.31	.53**
Class stratification	-.41***	-.21	-.32**
<b>Non-Marxian Materialist</b>			
Contribution of gathering	.23	.38*	.45***
Subsistence type	-.33***	-.42**	-.54***
Female contribution to subsistence	.05	.13	-.01
Female contribution to agriculture	.46***	.12	.57***
Intensity of cultivation	-.29*	-.39*	-.40**
Use of the plow	-.51**	-.63**	-.58***
Patrilineality	-.22	.05	-.52***
Patrilocal/virilocal residence	-.44**	-.27	-.43**

Numbers in the table are gammas. Ns range from 67 to 93.

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

greater the level of warfare, the lower the status of women, has no empirical support. It is true that men dominate the means of warfare, but this does not necessarily prevent women from having a relatively high degree of domestic authority, less strict controls on their sexuality by men, or the ability to form solidarity groups.

Divale and Harris's version of the militarist hypothesis focuses on band and tribal societies, whereas Collins is concerned mainly with militarism and warfare in large-scale agrarian societies. Therefore, we computed separate correlations for three different types of societies (results not shown). For hunter-gatherer societies, overall warfare was moderately correlated with female domestic authority ( $r = -.32$ ), but this was the only correlation that supported the militarist hypothesis. Overall warfare correlated .24 with female solidarity and .25 with male control of female sexuality; and even more striking, external warfare correlated .49 with female solidarity and .52 with male control of female sexuality. These correlations are in the opposite direction from that predicted by the theory.

For horticultural societies, female domestic authority and male control of female sexuality were uncorrelated with warfare, but ritualized female solidarity correlated .45 with overall warfare. Finally, for agrarian or intensive agricultural

societies, female domestic authority and female solidarity were not correlated with warfare, but male control of female sexuality correlated .38 with overall warfare and .55 with external warfare. Once again, however, all these correlations were in the opposite direction from that predicted by the theory. Thus, there does not appear to be an interaction effect between type of society and warfare, driving yet another nail into the militarist theory's coffin.

### *Marxian Hypothesis*

Table 1 shows six tests of the Marxian hypothesis. The first three tests used the independent variable, "female economic control of products of their own labor." Of these tests, only the one using female solidarity as the dependent variable was statistically significant and in the direction predicted by the theory ( $\gamma = .53$ ;  $p \leq .01$ ). The next three tests used class stratification as the independent variable. Although the relationships are in the predicted direction, only one (involving domestic authority of women) was both statistically significant and of moderate strength ( $\gamma = -.41$ ;  $p \leq .01$ ). In sum, the Marxian hypothesis is only partially supported. Three of the six statistical tests achieved significance, but only two of the six relationships were of moderate strength.

### *Non-Marxian Materialist Hypothesis*

The 24 tests of the non-Marxian materialist hypothesis are shown in Table 1. Sixty-seven percent (16 of 24) of these tests were statistically significant, and in 12 of the 24 relationships the measure of association was moderate to strong ( $\gamma = .40$  or higher). The variables that were most highly correlated with the dependent variables were use of the plow, subsistence type, female contribution to agriculture, patrilocal/virilocal, and intensity of cultivation. Across all three dependent variables, the average correlation for these independent variables was, respectively, .57, .43, .38, .38, and .36. The only non-Marxian materialist variable that was clearly not associated with gender inequality was women's contribution to subsistence (average  $r = .06$ ).

## **Summary of Bivariate Results**

In this preliminary segment of the research, there were 39 total tests of three hypotheses (13 independent variables each being associated with 3 dependent variables). The militarist hypothesis received no support at all, failing to achieve statistical significance in any of its statistical tests. The Marxian hypothesis had some support, with three of the six statistical tests being significant and two of the six relationships of at least moderate strength. The non-Marxian materialist hypothesis clearly achieved the best support, with 67% of the 24 statistical tests being significant and 50% of the relationships of moderate to high strength. We

can also look at the results in terms of which independent variables were at least moderately associated with at least two of the dependent variables. None of the independent variables that were part of the militarist or Marxian hypotheses were moderately or strongly associated with at least two of the dependent variables, but four of the eight non-Marxian materialist independent variables were moderately or strongly associated with at least two of the three dependent variables.

## PHASE 2: MULTIVARIATE RESULTS

### *Male Control of Female Sexuality*

The multivariate results for male control of female sexuality are presented in Table 2, along with the zero-order logistic regression results. As the results show, only four independent variables were significant under bivariate analysis. Only one independent variable, intensity of cultivation, was significant net of the other variables in the model. Societies with a lower intensity of cultivation are more likely to give higher status to women, which is supportive of a non-Marxian materialist explanation. None of the warfare and Marxian variables was an important determinant of male control of sexuality. The pseudo  $R^2$  was low (4%), and the model accurately classified only 64% of the cases, suggesting that the ability of the independent variables to explain male control of female sexuality was quite modest.

### *Domestic Authority of Women*

The multivariate results for domestic authority of women are shown in Table 3. Results from the ordinary least squares regression are shown because the results are quite similar to (and conclusions the same as) the ordered logistic regression. Although eight independent variables were significant under bivariate analysis, only three variables were significant in the multivariate model. Societies with greater class stratification, intensive agriculture, and patrilocal or virilocal residence were more likely to have lower levels of domestic authority for women. None of the warfare variables was a significant determinant of domestic authority. The one significant Marxian variable, class stratification, explained 14% of the variance, while the two significant non-Marxian materialist variables, subsistence type and locality of residence, explained an additional 11% of the variance. Thus, the overall model explained a rather robust 25% of the variance.

### *Female Solidarity*

Multivariate results for female solidarity from the ordinary least squares regression are shown in Table 4 because they were quite similar to the ordered logistic regression models. Although 10 independent variables were significant under

**Table 2. Logistic Regression Results for Male Control of Female Sexuality**  
(*N* = 72)

Independent Variables	Zero-order		Final Model	
	B <sup>a</sup>	Odds Ratio	B	Odds Ratio
<b>Warfare Variables</b>				
Frequency of warfare	-.14	.87	—	—
Internal warfare	.01	1.01	—	—
External warfare	-.19	.83	—	—
Pseudo R <sup>2</sup>			—	
<b>Marxian Variables</b>				
Female economic control	-.65	.52		
Social stratification	-.18	.84	—	—
Class stratification	-.14	.87	—	—
Pseudo R <sup>2</sup>			—	
<b>Non-Marxian Materialist Variables</b>				
Percentage contribution of gathering	.59†	1.81	—	—
Subsistence type	-.40†	.67	—	—
Female contribution to subsistence	.23	1.26	—	—
Female contribution to agriculture	.19	1.21	—	—
Intensity of cultivation	-.25†	.78	-.33†	.72
Use of plow	-.15†	.23	—	—
Patrilineality	.09	1.09	—	—
Patrilocal/virilocal	-.56	.57	—	—
Pseudo R <sup>2</sup>			.04	
Overall correct classification			64%	
Model chi-square (df)			5.47* (1)	

<sup>a</sup>B = Unstandardized logistic regression coefficient

†*p* < .10 (one-tailed)

\**p* < .05 (one-tailed)

\*\**p* < .01 (one-tailed)

bivariate analysis, only four were statistically significant in the multivariate models. Societies with greater female economic control, lower degrees of class stratification, greater female contribution to agriculture, and nonpatrilineal descent were more likely to have greater female solidarity. None of the warfare variables was a significant determinant of female solidarity. The two Marxian variables, female economic control and class stratification, were significant determinants of female solidarity, and together they explained a robust 29% of the variance. Two non-Marxian materialist variables, female contribution to agriculture and patrilineality, were significant determinants of female solidarity. Together, they increased the explained variance in female solidarity by 11% to a very robust 40% for the overall model.

**Table 3. Zero-order (Ordered) Logistic Regression Coefficients and OLS Regression Results for Domestic Authority of Women (N = 71)**

Independent Variables	Model 1			Model 2	
	Zero-order	B <sup>a</sup>	Beta	B	Beta
<b>Warfare Variables</b>					
Frequency of warfare	-.09	—	—	—	—
Internal warfare	-.16	—	—	—	—
External warfare	-.02	—	—	—	—
R <sup>2</sup>		—		—	
<b>Marxian Variables</b>					
Female economic control	.25	—	—	—	—
Social stratification	-.41*	—	—	—	—
Class stratification	-.42**	-.18**	-.38	-.11*	-.22
R <sup>2</sup>		.14			
<b>Non-Marxian Materialist Variables</b>					
Percentage contribution of gathering	.40†		—	—	
Subsistence type	-.50**			-.10†	-.19
Female contribution to subsistence	.12			—	—
Female contribution to agriculture	.71*			—	—
Intensity of cultivation	-.26†		—	—	
Use of plow	-1.22*			—	—
Patrilineality	-.52			—	—
Patrilocal/virilocal	-1.05†			-.43**	-.26
R <sup>2</sup>				.25	

<sup>a</sup>B = Unstandardized regression coefficient  
Beta = Standardized regression coefficient  
†*p* < .10 (one-tailed) \**p* < .05 (one-tailed) \*\**p* < .01 (one-tailed)

*Composite Gender Inequality Variable*

Multivariate results from ordinary least squares regression equations for the composite gender inequality variable are shown in Table 5. Although nine independent variables were significant under bivariate analysis, only two were significant in the final multivariate model. Societies with intensive agriculture and in which females made a lesser contribution to agriculture had more gender inequality. Societies that had more class stratification also had more gender inequality, although the Marxian variable was not statistically significant in the final model, once non-Marxian materialist variables were allowed to enter. None of the warfare variables was a significant determinant of gender inequality. A Marxian variable, class stratification, explained 21% of the variation in the composite measure of gender inequality. The non-Marxian materialist variables

**Table 4. Zero-order (Ordered) Logistic Regression Coefficients and OLS Regression Results for Female Solidarity (N = 54)**

Independent Variables	Model 1			Model 2	
	Zero-order	B <sup>a</sup>	Beta	B	Beta
<b>Warfare Variables</b>					
Frequency of warfare	.17	—	—	—	—
Internal warfare	.06	—	—	—	—
External warfare	.12	—	—	—	—
R <sup>2</sup>		—		—	
<b>Marxian Variables</b>					
Female economic control	1.37**	.43*	.27	.31†	.20
Social stratification	-.39**	-.22**	-.47	-.17**	-.35
Class stratification	-.31**	—	—	—	—
R <sup>2</sup>		.29			
<b>Non-Marxian Materialist Variables</b>					
Percentage contribution of gathering	.75**			—	—
Subsistence type	-.66**			—	—
Female contribution to subsistence	-.01			—	—
Female contribution to agriculture	.37**			.06†	.21
Intensity of cultivation	-.36**			—	—
Use of plow	-1.47**			—	—
Patrilineality	-1.28**			-.41*	-.26
Patrilocal/virilocal	-1.02**			—	—
R <sup>2</sup>				.40	

<sup>a</sup>B = Unstandardized regression coefficient  
 Beta = Standardized regression coefficient  
 †p < .10 (one-tailed)    \*p < .05 (one-tailed)    \*\*p < .01 (one-tailed)

increased the explained variance by 17 percentage points to a very robust 38% in the final model.

When pairwise deletion of data was used (results not shown), the results were very similar, although use of the plow and intensity of cultivation were also statistically significant and the total explained variance was 52%.

### Summary of the Multivariate Results

The multivariate results support the conclusion that warfare variables do not determine dimensions and levels of gender inequality. Marxian variables, on the other hand, do explain modest amounts of the variance in gender inequality. Non-Marxian materialist variables consistently contribute significant and substantial amounts to the explanation of gender inequality.

**Table 5. Zero-order Correlation Coefficients and OLS Regression Results for Composite Gender Inequality Variable ( $N = 53$ )**

Independent Variables	Zero-order	Model 1		Model 2	
		B <sup>a</sup>	Beta	B	Beta
<b>Warfare Variables</b>					
Frequency of warfare	-.002	—	—	—	—
Internal warfare	.05	—	—	—	—
External warfare	.003	—	—	—	—
R <sup>2</sup>		—		—	
<b>Marxian Variables</b>					
Female economic control	-.17	—	—	—	—
Social stratification	.38*	.38**	.46	.09	.11
Class stratification	.36**	—	—	—	—
R <sup>2</sup>		.21			
<b>Non-Marxian Materialist Variables</b>					
Percentage contribution of gathering	-.36**			—	—
Subsistence type	.56**			.39**	.38
Female contribution to subsistence	-.03			—	—
Female contribution to agriculture	-.46**			-.13*	-.24
Intensity of cultivation	.37**			—	—
Use of plow	.44**			—	—
Patrilineality	.25**			—	—
Patrilocal/virilocal	.35**			—	—
R <sup>2</sup>				.38	

<sup>a</sup>B = Unstandardized regression coefficient  
Beta = Standardized regression coefficient  
† $p < .10$  (one-tailed)    \* $p < .05$  (one-tailed)    \*\* $p < .01$  (one-tailed)

To provide a more definitive test of the relative effects of the Marxian versus the non-Marxian materialist variables, and to ensure that there were no suppressor (spurious nonassociation) effects (especially for the militarist variables), an additional set of multivariate analyses was performed. In this case the non-Marxian materialist variables were entered first, the Marxian variables second, and the militarist variables at the end. With respect to women's domestic authority, the non-Marxian materialist variables accounted for 11% of unique variance, the Marxian variables for 3% of unique variance, and the two sets of variables mutually explained 11% of the variance. In looking at the female solidarity variable, the non-Marxian materialist variables accounted for 11% of unique

variance, Marxian variables accounted for 12%, and they mutually explained 17% of the variance. Finally, in looking at the composite gender variable, the non-Marxian materialist variables accounted for 17% of unique variance and the two sets of variables mutually explained 20% of the variance. The Marxian variable class stratification explained only 1% of unique variance, and this was not statistically significant. When the militarist variables were entered at the very end, they failed to explain any of the variance in the gender variables, ruling out the possibility of suppressor effects.

The results thus suggest that, although the Marxian variable class stratification has explanatory importance, overall the non-Marxian materialist variables are clearly substantially more powerful in explaining variations in gender status in our sample of societies. The average unique variance explained by the non-Marxian materialist variables across all dependent variables (excluding control of female sexuality) was 13%, whereas the average unique variance explained by the Marxian variables was only slightly more than 5%. The mutual explained variance across the same dependent variables averaged 16%. This gives us a total variance explained of 34%, which is quite robust, especially when considering the relatively weak measurement of the dependent variables.

## Conclusions

This study empirically tested three major types of theories of gender inequality in preindustrial societies. Militarist theories received no support at all. We found no evidence that warfare lowers the status of women, as these theories suggest. Marxian theories received some support, with class stratification being a consistent determinant of the status of women. It is non-Marxian materialist variables, however, that consistently received the most support across all the bivariate and multivariate analyses. Women tend to do best in societies with modes of production that are relatively un-intensive. When the mode of production is more intensive, women do better if they make an important contribution to agricultural production. Women do worse when the residence system is patrilocal and the descent system patrilineal.

Issues of collinearity among the independent variables make it difficult to determine exactly which specific non-Marxian materialist variables are the strongest determinants of gender inequality. Nevertheless, we can conclude that it is non-Marxian materialist theories that provide the best explanations of the variations in gender inequality from one society to another. Our research has been guided by a philosophy of science that we take to be the norm in the natural sciences, if not always in sociology. This philosophy emphasizes the idea of *parsimonious explanation* and *comparative theory testing* (Laudan 1977). Parsimonious explanations are those that explain the most with the least; the fewer

the concepts and assumptions that are needed to explain a given phenomenon or category of phenomena, the better the explanation. Explanations can be made parsimonious only by testing competing theories comparatively, that is, against each other as well as against a body of data. The objective of such testing is for a single explanation, or a single type of explanation, to survive. Such an objective does not preclude building synthesized or integrated models or explanations when the data suggest that this is what is needed. To some extent that is needed in research on variations in gender inequality, since Marxian explanations do receive some empirical support in the present research. But such a synthesized model can be a goal only for future research; we are not able to accomplish that here. This future research might also want to consider additional material factors, especially those involving sexual politics and the gender organization of reproduction, as suggested by Collins et al. (1993).

Naturally, the present study has certain limitations, the most significant of which is probably the relatively weak level of measurement of the explanandum. We used three measures of the status of women in addition to a composite measure, but these were not ideal measures of gender inequality. The interitem correlations within each measure were relatively low, and the measures correlated only weakly among themselves. Nonetheless, the SCCS is the only cross-cultural sample that we know of that includes gender status variables of any type, and we used the best gender status variables that were available. Moreover, random measurement error reduces the size of statistical relationships. With more reliable measures, the relationships we observed would very likely be stronger.

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