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Gender Effects as Macro-Level Effects: Germany and the United States 1991–1997

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Summary

My research examines within-nation differences as well as cross-national differences in socially stratified outcomes, specifically the distribution of household incomes. I build on the considerable empirical evidence suggesting that group memberships are important factors in shaping one's life course and in determining the level of social inequality. I examine seven years of longitudinal data from Germany and the United States, 1991-1997 to demonstrate that gender is situated within other salient social categories such as race and marital status. These qualitative distinctions form status-based groups that organize the social hierarchy in which individual action is both enabled and constrained.

1. Introduction

When a female graduate from a prestigious business school interviews for a job in the United States, if she is married and wears a wedding ring, she is likely to take it off and even make sure not to get tan lines (Schwartz, 1992).[1] This woman and others like her understand that regardless of individual decisions or past record, membership in the group of married women of childbearing age results in fewer and less generous job offers.

While survey data cannot capture subtle deceptions like this, the above story points to the obvious manner in which marital status and gender combine in an interactive way to organize behavior. I argue that the effect of status characteristics on behavior typically operate through interactive processes as described in this story. Gender, for example, is situated within other salient categories. These overlapping inequalities constitute *status-based groups,* qualitative group-defined distinctions among individuals. This set-theoretic argument implies that traditional ways of modeling are not adequately capturing the effects of gender and other primary social categories.

My paper instead takes an alternative approach to modeling the structural effects of status characteristics on individual outcomes. To examine these status-based groups, I have defined 16 groups for the United States and 24 groups for Germany based on gender, marital status, household composition, and a measure of social standing (race for the United States and citizenship for Germany). At different points in time and in different contexts, a particular membership category will be more or less salient.[2] There is a tradeoff between developing a model that more accurately captures lived experiences within a given country (specificity) and developing a model that allows for cross-national comparison (comparability). I demonstrate the importance of going beyond macro-level measures. I do not account for all of the complexity in social categorizations that clearly exist; the aim of this analysis is to move further along in specificity while retaining comparability.

I examine the effect of status-based group memberships on annual household income among residents of the United States and Germany between the ages of 25 and 45 from 1991 to 1997. Before turning to some preliminary results, I briefly discuss my theoretical framework, the literature from which this framework emerged and my formal model.[3]

2. Theoretical Framework

Quantitative work has historically handled gender in two ways. The first way is to estimate separate models for men and women and thus construct one- or two-way interactions between gender and other explanatory factors (Rosenfeld and Kalleberg 1991; Harkness and Waldfogel 1999). These researchers attempt to explain the gender differences in wages as one- or two-way interactions, comparing the gaps between women and men across different countries and over time. The second approach looks at the sex composition of the workplace. The feminization of occupations and occupations with persistent sex segregation are used to explain variations in the gender gap in wages (England et al. 1988; Reskin 1993; Hakim 1993). Substantial evidence has emerged from these strands of research suggesting that aggregate measures of income and labor force participation within a given

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[1] A more extreme and disturbing example of women attempting to reject membership in a particular status-based group is the dramatic increase in demand for sterilizations by former East German women in 1992. Sterilization was thought to increase one's job prospects (Chamberlayne, 1994).

[2] For an immediate example, it is entirely possible that the effect of being a former citizen of the GDR will decline in salience as the social assimilation between east and west German states proceeds.

[3] Much of the theoretical framing for this project is omitted due to space constraints. Please contact the author for a longer version of this paper.

country obscure substantial within-country variation. For example, employment levels among mothers are highly contingent both on marital status and country. In the United States, approximately 38.6 percent of lone mothers are working full-time, while 32.6 percent of other mothers are working full-time. In Germany, around 30.5 percent of lone mothers are employed full-time, similar to the United States. In contrast, however, only 18.7 percent of other mothers are employed full-time. Within this 18.7 percent, just under 50 percent of former East German mothers are employed full-time. The full-time participation rates for former West German and foreign mothers are considerably lower (10 and 17 percent, respectively) (1994 figures from Cross National Equivalent File, author's calculations).

One way to make the differences more clear while looking at one- or two-way interaction effects has been to limit the study to a particular type of person — the most noticeable example is lone mothers (Duncan and Edwards 1997). Many researchers have specifically considered the relationship between welfare state generosity and poverty rates for single mothers (Millar 1989; Hobson 1994; Christopher et. al. 1999). The United States has one of the highest proportions of single parent families among advanced industrialized country; yet, over 80 percent of all families in the United States are not single parent households. In my analysis, I attempt to retain the specificity achieved in studies of lone mothers, while including all types of women and men.

This paper places theoretical primacy on group effects. I suggest that measuring gender at the group level is more theoretically sound than measuring it at the individual level. Individuals are often thought of as a collection of characteristics coalescing to shape life course outcomes such as income growth, promotion rates, and labor force participation level. We, especially in the United States, like to believe we live in a meritocratic world; however, categorization and stereotyping are mechanisms often concealed but often explicit in determining access and provision levels.[4] Considerable econometric evidence has demonstrated the primary group effects on individuals' life chances. For example, Crane (1991) demonstrates a negative relationship between the percentage of managers and professionals residing in a community and the rates of high school dropouts and teen pregnancies after controlling for family background characteristics. I argue, along with other sociologists and economists (Durlauf 1999; Reskin 2000; Witte 2000), that the dominant ways of doing quantitative analyses often do not adequately consider the contextual relationship between institutional structures and individual outcomes. Building on these scholars' research, my approach highlights the importance of exploring the interactions. I start with an assumption of "multiple, conjunctural causation" at the macro-level rather than assuming linear additive causal mechanisms at the individual level (Ragin 1987, 2000). Essentially, this is an attempt to map the complex social hierarchies within which people operate.

3. Method and Data

My approach provides an opportunity to examine national differences as well as cross-national differences across status-based groups. I use seven years of longitudinal data from the Cross-National Equivalent Data File (Wagner, Burkhauser, and Behringer 1993). The sample consists of adult respondents between the ages of 25 and 45 at the time of the observation.[5]

In the German sample, there are 8,349 people (4,173 women and 4,176 men). There are 11,527 people in the United States sample (6,012 women and 5,515 men), from which I exclude respondents who are identified as neither white nor black. The average number of observations per individual during this six-year period is four. The results presented here are ordinary least squares regression results predicting post-tax-and-transfer household income adjusted for household size using the OECD equivalence scale.[6] In order to avoid interpreting sample-specific data patterns, the PSID and GSOEP samples are divided into two 50 percent subsamples for separate analyses; only those aspects of the pattern appearing in both subsamples are discussed in the Results section.

Construction of Status-based Groups

Four categorical distinctions are used to construct status-based groups for both the United States and German samples: gender, marital status, household composition, and social standing.

Gender. *Two categories, female and male, comprise the gender category.*

Marital Status. As rates of divorce, cohabitation, single parenthood, and delayed age of marriage all increase,

[4] For example, insurance is a venue where decisions based on certain kinds of group-based knowledge are explicit. In the United States auto insurance premiums for unmarried men are significantly higher than for married men or women. The actuaries responsible for calculating these premiums are not discriminating per se but merely using group-based knowledge (that single men, on average, are more likely to have car collisions).

[5] Identical analyses for those between ages 25 and 55 as well as ages 30 to 40 were conducted. I chose to present the results for prime labor force participation and childbearing years in order to limit the conflation of life cycle effects with group memberships.

[6] Results of the fixed-effects model, accounting for the unobserved heterogeneity that results in biased estimates of the standard errors, are presented in the longer version of the paper.

women are increasingly less likely to have a male income on which to rely. Respondents are classified into two groups: married and unmarried. The married group consists of all respondents who were married at the time of the observation. Separated couples were considered married for this analysis. The unmarried group consists of single, widowed, and divorced respondents.

Household Composition. Christopher, England, Ross, Smeeding, and McLanahan (1999) examine the effects of household structures (defined as married or cohabiting parents, married or cohabiting without children, single parents, and single without children) on cross-national poverty rate differentials. They conclude that family structure contributes in part to the high gender gap in poverty in the United States relative to other highly industrialized countries. Harkness and Waldfogel (1999) also highlight the presence of children as a substantively important influence on wages. I classify the GSOEP and PSID respondents into two groups: one group does not have children under the age of 18 residing with them; the other group has children under age 18 currently residing with them in their primary place of residence.[7]

Social Standing. Race and citizenship are concepts with specific historical and contemporary meanings in Germany and the United States. Formal citizenship in Germany is restrictive; the 1913 law grants citizenship based on patriarchal German ancestry (Ginsburg 1994). Guest workers and ethnic migrants (e.g., Turks, Yugoslavs, Italians) have limited access to civil society and social rights. In contrast, the United States model is based on what Castles and Miller (1993) designate as a multicultural model, where membership is based on acceptance of core political values. Permanent legal residents have the same rights formally as citizens. However, informal practices result in a racial minority population with limited access to civil rights and social services. Broadly called social standing, this category attempts to capture substantive status classifications and subsequent differences in access to civil society and social rights.[8]

The structure of social relations is highly contingent on historical trajectories (e.g., imperialism, labor systems, migration flows) and political policies (e.g., personhood/citizenship, relation of religion to state formation, labor market regulation.) In the United States, stratified racial and ethnic identities form a basis of power in social relations; while in Germany, national membership is a far more salient distinction. These specific traditions of exclusion are modeled as multichotomies. For the United States, the dichotomy is white and black respondents; I exclude all PSID respondents who reported a race of "other." In Germany, there are three groups with distinct social standing: the former West Germans, the former East Germans, and guest workers/ethnic migrants.

Aggregate Measures of Status-based Group Effects

My approach, highlighting the importance of exploring the interactions of overlapping inequalities such as gender and race, calls for more subtle aggregate measures of group effects. I construct these aggregate measures using the Cross-National Equivalent File data and status-based definitions. Using cross-sectionally weighted data for each year, I determined the mean levels of education, work hours, labor earnings, as well as the percentage breakdowns of education and employment by status-based group. These group averages are attached to each individual in the group regardless of their individual characteristic; these group-level characteristics can then begin to shed light on the effect of the complex hierarchy of social categorizations and their influence on individual outcomes.

Household Income

Post-tax-and-transfer household income, adjusted for household size using the OECD equivalence scale, is the dependent measure in this initial analysis. While individual income or personal wealth may be a better measure of an individual's autonomy within a household, I consider household income equivalence in an initial attempt to capture the daily experiences of those non-working and dual-career women and men and the variety of household arrangements in which they reside.

4. Results

Table 1 provides the mean household equivalent incomes for the German and United States samples aged 25–45 by gender. These numbers suggest that there is not a great deal of difference in household incomes for women and men across citizenship and racial categories. One interpretation might be that women and men are much more likely to marry someone of the same citizenship or racial group. Another interpretation is that citizenship and race matter (e.g., there is a large gap in mean incomes between black and white United States respondents) but gender does not (e.g., smaller gaps between black women and black men, as well as white women and white men). However, these aggregate figures do not examine the salient categorical distinctions within these countries. To examine gender differences

[7] Additional analyses considering the presence of children under the age of 5 and 11 are available upon request.

[8] I use a common label for very different underlying classifications for rhetorical purposes only — I am not assuming that social standings are equivalent across countries. For example, I am not asserting that being white in the United States is equivalent to being formerly West German in Germany.

within these countries, we must map a more complex social terrain.

From Table 1, we might conclude that there is a huge penalty for being black in the United States and that white households take home about twice the income of black households. A white woman is, on average, in a household with an income of $31,852; however, when we disaggregate this number, it begins to lose its simplicity. In Table 2, we can see that the average income of white women ranges from $15,113 for unmarried mothers to $47,270 for married women without children in the household.

Analysis of the variance results, examining group membership effects on the natural log of household net income using OECD equivalency scales for adults ages 25-45, are available upon request. The results discussed here are those that were robust enough to remain when 50 percent subsamples were created and analyzed again. For Germany, the differences in all the status-based groups compared with unmarried German (E.) mothers are significant at $p < .001$ for all groups, with two exceptions. There is no statistically significant difference in income levels between unmarried male or female guest workers without children and the reference category, unmarried German (E.) women. The differences for the United States groups compared with unmarried black mothers were all statistically significant ($p < .001$), with one exception; there is no difference in equivalent household net incomes between the reference group and unmarried black men living with children under the age of 18.

These models, essentially saturated interaction models, were compared with models estimating only main effects. The saturated interaction models explain significantly more of the variation in household income than the main effects models for both countries. Contrary to standard hierarchical methodologically-driven rules, I argue that the group membership approach is preferred on theoretical grounds. Methodologically, we might give primacy to the more traditional model because it is more parsimonious. However, an equally valid concern is for our models to be theory-driven. Both models for both countries are explaining a statistically significant amount of variation (ranging from 8 to 15 percent) in household income, which suggests that the causation is complex. In the next set of models, I include characteristics of the status-based groups in the models to capture the degree to which group-based features shape individual or household outcomes, specifically household income.

Table 3 provides preliminary results for three models predicting household income using status-based group characteristics in conjunction with individual characteristics. Here I am trying to explain the variation in incomes, using characteristics of each group while retaining the direct effects as an effort to accommodate a more standard additive approach. The group-level characteristics (average years of education within status-based group, aver-

Table 1

Comparison of Mean Equivalence Household Incomes by Citizenship/Race and Gender (1994)*

	Germany			
	Women	Men	Total	Unweighted N
German (E.)	26,312	27,393	25,805	1,581
German (W.)	37,770	40,207	35,443	2,942
Foreigner	28,420	28,379	27,416	909
Total	34,037	35,990	35,007	5,681
Unweighted N	2,862	2,819	5,681	
	United States			
Women	Men	Total	Unweighted N	
Black	15,320	17,960	16,211	2,947
White	31,852	31,460	29,933	4,977
Total	28,630	29,535	29,065	8,472
Unweighted N	4,515	3,950	8,472	

* A table of unweighted sample sizes broken down by citizenship/race and marital status is included in a longer version of this paper. Please contact the author: *amoroso@northwestern.edu* for a copy. Even with four dimensions to the status-based categories, the smallest number of respondents in a given cell (foreigner, unmarried women) was 83 for Germany (in 1994). For the United States, the smallest number of respondents in 1994 was for the cell containing black married men (N = 159).

Source: Cross-National Data File, own Calculations

Table 2

Comparison of Mean Equivalence Household Incomes by Citizenship/Race, Household Composition, and Marital Status for Women (1994)

	Women in Germany					
	NO CHILDREN			CHILDREN		
	Not Married	Married	Total	Not Married	Married	Total
German (E.)	26,849	32,817	30,209	19,970	26,565	25,305
German (W.)	36,263	51,486	42,982	26,534	36,034	35,062
Foreigner	28,245	30,957	29,915	26,772	28,034	27,885
Total	34,461	45,738	39,816	23,659	32,754	31,570
	Women in the United States					
	NO CHILDREN			CHILDREN		
	Not Married	Married	Total	Not Married	Married	Total
Black	15,896	21,402	17,608	10,742	18,624	14,444
White	26,680	47,270	36,464	15,113	32,537	29,428
Total	24,746	44,755	33,791	13,358	30,937	26,659

Source: Cross-National Data File, own Calculations

age age, and average number of children) have a significant effect on household incomes (Model 3) in both countries. The magnitude of these effects is stronger in the United States, where social policy leans less toward income redistribution and the income distribution is less compressed than in Germany.[9]

5. Conclusion

For this paper, I constructed my status-based groups with the goal of answering questions around marriage and child-rearing. Other questions might require a fuller accounting of the complexity of social categorizations, where status groups defined on the basis of, for example, immigration/generation, occupation, or religion might be especially salient. The results above suggest that the set-theoretic approach to modeling gender dynamics is fruitful. A key component must be to interpret these results within the social and political context of Germany and the United States. Social events need to be understood as embedded in social relationships and structures that shape the events' meanings and effects. If possible, the analysis ought to incorporate measures that account for these events. For example, a next step is to capture a shift in state provisioning by incorporating information about the changes in the United States in an individual's receipt of state funds from contributory-based government programs (e.g., unemployment insurance) as well as needs-based programs (e.g., Temporary Assistance to Needy Families).

My approach is a set-theoretic approach, one that is sensitive to interaction effects. Gender, specifically, is more than an individual characteristic and can be modeled as a group membership effect using quantitative modeling techniques. I argue that an individual's structural position in a highly gendered arena shapes and constrains an individual's opportunities. In day-to-day interactions this becomes obvious. We know that there is a qualitative difference between certain categories of people (e.g., white/non-white, Turk/German, mothers/non-mothers). My model combines individual micro-level data with macro-level data to consider these qualitative differences. These data demonstrate that additional analyses, considering the overlapping effects of gender, race, and other commonly considered individual characteristics as socially organizing principles, are warranted.

[9] Again, a more fully developed discussion of the results presented here is available upon request.

Table 3

Regression Results Examining the Natural Log of Household Net Income using OECD Equivalency Scales for Adults (25–45 years of age) using Individual and Status-based Category Characteristics (1991–1997)

	Germany *Ref Cat: Female, German (E.), Not Married, and Has Kids*			**United States** *Ref Cat: Female, Black, Not Married, and Has Kids*		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Average Years of Education	0.0036 (0.011)	—	–0.0685 ** (0.010)	0.039 (0.025)	—	–0.1486 ** (0.025)
Average Age	–0.0090 * (0.004)	—	–0.0324 ** (0.004)	–0.024 ** (0.007)	—	–0.0514 ** (0.007)
Average # of Children	0.0000 ** (0.000)	—	0.0000 ** (0.000)	0.000 ** (0.000)	—	0.0000 ** (0.000)
High School Degree	—	0.0153 (0.010)	0.0203 * (0.010)	—	0.4289 ** (0.018)	0.4268 ** (0.018)
Greater than HS	—	0.2700 ** (0.013)	0.2788 ** (0.013)	—	0.8147 ** (0.018)	0.8149 ** (0.018)
Part-time Work	—	0.2431 ** (0.011)	0.2656 ** (0.012)	—	0.3491 ** (0.017)	0.3523 ** (0.017)
Full-time Work	—	0.4261 ** (0.010)	0.4710 ** (0.011)	—	0.6947 ** (0.016)	0.7117 ** (0.016)
Male	0.0272 ** (0.010)	–0.0981 ** (0.008)	–0.0908 ** (0.010)	–0.007 (0.012)	–0.1181 ** (0.011)	–0.1126 ** (0.012)
German (W.) | White	0.0746 ** (0.017)	0.2715 ** (0.009)	0.0476 ** (0.017)	0.488 ** (0.026)	0.5008 ** (0.012)	0.4689 ** (0.025)
Guest Worker/Foreigner	–0.0562 * (0.025)	0.0533 ** (0.012)	–0.1176 ** (0.025)	n/a	n/a	n/a
Has No Children	0.2494 ** (0.010)	0.1863 ** (0.009)	0.1906 ** (0.010)	0.230 ** (0.015)	0.1767 ** (0.012)	0.2233 ** (0.015)
Married	0.0487 * (0.020)	0.1496 ** (0.010)	0.0673 ** (0.019)	0.529 ** (0.025)	0.4790 ** (0.013)	0.4681 ** (0.025)
Constant	9.8106 ** (0.206)	9.6513 ** (0.015)	11.1348 ** (0.201)	9.177 ** (0.389)	8.1341 ** (0.021)	11.5817 ** (0.380)

** p < .01, * p < .05
Source: Cross-National Data File, own Calculations

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