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## Calling the Bluff of Value-Free Science

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- University Press.
- Komarovsky, Mirra. 1946. "Cultural Contradictions and Sex Roles: The Masculine Case." *American Journal of Sociology* 52:184–89.
- . 1992. "The Concept of the Social Role Revisited." *Gender and Society* 6:301–313.
- Laqueur, Thomas. 1990. *Making Sex: Body and Gender from the Greeks to Freud*. Cambridge, MA: Harvard University Press.
- Lepowsky, Maria. 1993. *Fruit of the Motherland: Gender in an Egalitarian Society*. New York: Columbia University Press.
- Lorber, Judith. 1994. *Paradoxes of Gender*. New Haven, CT: Yale University Press.
- . 2000. "Using Gender to Undo Gender: A Feminist Degendering Movement." *Feminist Theory* 1:101–18.
- Lopata, Helena Zaniecki and Barrie Thorne. 1978. "On the Term 'Sex Roles.'" *Signs* 3:718–21.
- Martin, Emily. [1987] 1992. *The Woman in the Body: A Cultural Analysis of Reproduction*. Boston, MA: Beacon.
- McFadden, Robert D. 1999. "Pregnant Mother of 3 Is Charged in Girl's Beating Death." *New York Times*, September 14, p. B3.
- McKittrick, Meredith. 1999. "Faithful Daughter, Murdering Mother: Transgression and Social Control in Colonial Namibia." *Journal of African History* 40:265–84.
- Moore, Henrietta. 1994. *A Passion for Difference: Essays in Anthropology and Gender*. Bloomington, IN: Indiana University Press.
- Oyewùmí, Oyeronke. 1997. *The Invention of Women: Making an African Sense of Western Gender Discourses*. Minneapolis, MN: University of Minnesota Press.
- Rubin, Lilian B. 1994. *Families on the Fault Line: America's Working Class Speaks about the Family, the Economy, Race, and Ethnicity*. New York: HarperCollins.
- Secombe, Karen. 1991. "Assessing the Costs and Benefits of Children: Gender Comparisons among Childfree Husbands and Wives." *Journal of Marriage and the Family* 53:191–202.
- Shilling, Chris. 1993. *The Body and Social Theory*. London, England and Newbury Park, CA: Sage.
- South, Scott J. 1993. "Racial and Ethnic Differences in the Desire to Marry." *Journal of Marriage and the Family* 55:357–70.
- Spain, Daphne and Suzanne M. Bianchi. 1996. *Balancing Act: Motherhood, Marriage, and Employment among American Women*. New York: Russell Sage Foundation.
- Tavris, Carol. 1992. *The Mismeasure of Woman*. New York: Simon and Schuster.
- Thorne, Barrie. 1986. "Girls and Boys Together . . . but Mostly Apart: Gender Arrangements in Elementary School." Pp. 167–84 in *Relationships and Development*, edited by W. W. Hartup and Z. Rubin. Hillsdale, NJ: L. Erlbaum Associates.
- Turner, Bryan S. 1984. *The Body and Society: Explorations in Social Theory*. Oxford, England and New York: Basil Blackwell.
- Udry, J. Richard. 2000. "Biological Limits of Gender Construction." *American Sociological Review* 65:443–57.
- U.S. Census Bureau. 1999. "Marriage Rates and Median Age of Bride and Groom, by Previous Marital Status, 1970–1990." Table 158, P. 111, in *Statistical Abstract of the United States*. Washington, DC: U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census.
- Valian, Virginia. 1998. *Why So Slow? The Advancement of Women*. Cambridge, MA: MIT Press.
- Wendell, Susan. 1996. *The Rejected Body: Feminist Philosophical Reflections on Disability*. New York and London, England: Routledge.
- West, Candace and Don Zimmerman. 1987. "Doing Gender." *Gender and Society* 1:125–51.
- Wijnngaard, Marianne van den. 1997. *Reinventing the Sexes: The Biomedical Construction of Femininity and Masculinity*. Bloomington, IN: Indiana University Press.

Comment on Udry, ASR, June 2000

## CALLING THE BLUFF OF VALUE-FREE SCIENCE

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ONCE IN A WHILE an article is published that challenges currently held notions within a scientific paradigm. It is usually the case—and should be the case—

Direct correspondence to: Barbara J. Risman, Department of Sociology North Carolina State University, Raleigh, NC 27695-8107 (Barbara\_Risman@ncsu.edu). I thank my graduate students in Sociology of Gender for the lively discussions which helped to generate the ideas for this response. I also thank Judith Howard, Kecia Johnson, Myra Marx Ferree, Joey Sprague, Donald Tomaskovic-Devey, Patricia Warren, the anonymous reviewers at the ASR, and the authors of the two other critiques published in this issue for their helpful comments on early versions of this article.

that for such an article to withstand the rigors of peer review it must thoroughly address current understandings, clearly reference key and pivotal writings, and successfully challenge them.

Thus it is all the more surprising to find that Udry's [2000, henceforward Udry] "Biological Limits of Gender Construction" passed by the gatekeepers of the *American Sociological Review* without citing or directly engaging the concepts, arguments, and findings of the considerable literature on the sociology of gender that has been developed in the past 30 years. Although Udry positions his work as "one of a series of articles that struggles toward a theory of gendered behavior" (p. 443), his literature review completely skips any discussion of existing sociological theories of gendered behavior, providing only one reference (to the psychologist Maccoby's [1998] book, *The Two Sexes*) as an example of "[T]raditional social science models of gender . . . [that] assume that behavioral differences between the sexes emerge as a consequence of socialization and social structure" (p. 445). Udry's failure to notice that "socialization" and "social structure" are theoretically quite distinct causes for gendered behavior illustrates his seeming ignorance of contemporary sociology of gender in which sex role socialization and gender relations models are conceptualized as alternatives (Ferree and Hall 1996). Udry consistently confuses sex role theory with more recent feminist approaches to gender construction in interaction and the institutionalization of gender itself (Lorber 1994; Ridgeway and Smith-Lovin 1999; Risman 1998).

In this comment, I attempt to lay out in detail the conceptual flaws that arise in Udry's argument from his failure to reference contemporary theories of gender. I contrast the definitions of gender and women's gendered behavior that Udry advances with those viewed as more adequate by most sociologists in the field. I then focus on the blatantly political aspects of Udry's article. Finally, I suggest that the positivist model of science not only failed in this particular instance to recognize and exclude the expression of particular political values, but that "value-free science" as such is not only an impossible goal but it is an inappropriate one

that distorts the research and publication practices of sociology.

### CONCEPTUAL SHORTCOMINGS

Udry's concept of gender differs in important respects from that of sociologists of gender. Since Udry positions his article in *ASR* as the third of a series, it is useful to return to an earlier article in his series (in *Demography* [Udry 1994]) to fully understand his assumptions and theoretical framework. There, Udry offers a model of sex-dimorphic behavior that visually depicts two somewhat overlapping distributions of some general underlying disposition for masculinity versus femininity. The model explicitly conceptualizes "the normative structure of societies" expressed in gender socialization as either recognizing and reflecting such "natural" predispositions or attempting to drive the two distributions together. His formal definition of gender in this article is "the relationship between biological sex and behavior. . . . A gendered behavior is one that differs by sex" (1994:561). In his *ASR* article, Udry again assumes a "biological process that produces natural behavior predispositions" that will be categorically different for men and women (sex-dimorphic) and that this biological process "constrains" socialization effects (p. 444). The interactive process that he conceptualizes is one that takes place between forces pulling in opposite directions: socialization built upon what he calls a "social constructionist" view of gender that attempts to minimize differences in behavior between women and men, and "natural behavioral predispositions" in individual women and men that express species-typical female behavior when androgen levels are low and masculinized behavior when more testosterone is present (p. 445).

Udry thus argues that gendered social structure is a result, rather than a cause, of behavioral difference: "Humans form their social structures around gender because males and females have different and biologically influenced behavior predispositions. Gendered social structure is a universal accommodation to this biological fact" (p. 454). Both the social structure itself and the degree of conformity exhibited by individuals to this structure he attributes to bio-

logical predisposition. Udry's *ASR* article focuses entirely on variation among women. In his theoretical account, "The concept of women's gendered behavior refers to the degree to which a woman's behavior is more 'masculine' or more 'feminine' *for those behaviors on which women and men typically differ*" (p. 445, emphasis added).

Gender is therefore reduced in Udry's model to "differences between women and men," or sex-dimorphism itself. This definition rests upon the assumption that there are such things as "behaviors on which men and women typically differ," even when viewed in a longer historical perspective and across cultures and societies. What men and women "typically" do differently is extremely difficult if not impossible to determine, as gender researchers have shown. And differences vary by culture and over time. For example, "being illiterate" is a variable on which an average difference between women and men can be found in many countries (although not all, as with most of Udry's inconsistent measures), and according to Udry's grab-bag conceptualization of what constitutes gender there would be no reason not to include illiteracy as an indicator of the "natural behavioral predisposition" to femininity.

If, however, what femininity "is" is not an essence within an individual but a social norm that is constantly being redefined and renegotiated culturally, as gender theorists such as Lorber (1994) and Ridgeway and Smith-Lovin (1999) suggest, then the specific differences Udry is measuring can be expected to come and go as social structures and opportunities change. The common element would not be an individual essence but a social relationship, one that is hierarchical and structural and in which individuals are located by institutions and through interaction (Risman 1998).

By using the term "social constructionist" to label the view against which he is arguing, Udry obscures the fact that the theory he challenges is at least two steps behind contemporary gender relations theories. The earliest Parsonian sex role model posited a dichotomy of instrumental versus expressive behavior, presumed to be synonymous with masculine versus feminine personality and to be distinctively suitable for responsibilities in either the public or the private sphere.

Kanter (1977) aptly labeled this the individualist sex role paradigm. Efforts to study sex roles within individuals increasingly led to paradoxes rather than explanations (Lorber 1994): The empirical literature demonstrated that the presumed stability of such a "role" was exaggerated, and specific life situations and opportunities drew out quite varied responses from the same individual (Connell 1987; Gerson 1985; Risman 1987).

Indeed, the more the research advanced, the more complicated the notions of gender became. It appeared there were varieties of masculinities and femininities found not only in remote island cultures but also expressed in subgroups in any given society (what is masculine for a scientist in a high-tech corporation and in an inner-city gang have little to do with one another) and changing over the life cycle (occupational preferences as adolescents had less to do with adult occupational status than assumed [Jacobs 1989]). What is considered feminine and womanly for one group of women (e.g., the white middle-class American research subject) is simply an untenable description of women in other cultures, or even in other social classes within our own culture (Glenn 1999; Segura 1993). Beyond that, of course, there is no one gender role for any given person. The same woman might be a vicious litigator and a nurturing mother. The cut-throat financial trader might be a tender caretaker to his dying lover. The notion that one person is socialized to a cross-situational "femininity" or "masculinity" has eroded away under the weight of empirical research, making the "social constructionist view" against which Udry positions himself into a sociological figment of his own imagination.

Currently, gender has come to be conceptualized as a stratification system—an institution or structure that has consequences for individual identities and the expectations of others (Ferree and Hall 1996; Lorber 1994; Risman 1998). Black feminist thought and research based upon this concept has further suggested that what has been defined as feminine (from yardsticks of beauty, to marriage, to willingness to perform domestic labor, to working in traditionally female job categories) only describes the kinds of lives that white middle-class women have been able to live (Collins 1990; Espiritu 1997;

Higginbotham 1992; Myers, Anderson, and Risman 1998). Today, both race and gender are understood as relational systems of privilege in which certain types of human variation are constructed as politically significant differences (Glenn 1999). The sociological view of gender includes the categories, norms, interactions, and structures of gender relations as what is being constructed, not as two bipolar types of personality.

It is the earliest, dichotomous masculine and feminine version of gender, now thoroughly discredited by decades of empirical research, that Udry claims to be integrating into his own version of biosocial science. But given that sociological theory has moved beyond the idea of gender as personality and discovered gendered interactions and institutions, this "integration" makes little conceptual sense and is less than useful to the sociological enterprise. Instead, Udry seems to be offering an integration of state of the art of 1960's sex role theory with his perhaps equally moribund view of the hormonal causation of behavior (see the critique of the recency and accuracy of that literature in the comment by Miller and Costello [2001]).

Within its own framework, Udry's article fails the test of cumulative good science. His approach to gender as what happens to be sex-typical behavior among twentieth-century white American women leads him to adopt measures that sociologists understand to be tapping hierarchical, interpersonal, and normative social relations (such as the likelihood of being in a lower-status job, preference for and being in a female sex-typed job, having a conventional domestic division of labor). Rather than an expression of "species-specific" personality, Udry's dependent variables make no sense outside of the gendered social structure that defines, in a particular culture, what men and women should be like.

#### **GATES AND GATEKEEPERS: EDITORIAL AND REVIEW PROCESS**

Given the shortcomings of Udry's article, the question of why a major sociological journal would choose to publish it becomes central. The oddity of the decision is under-

lined by other elements of the article itself: The theoretical discussion of measurement appears in an appendix; there is a section entitled "speculation" between the report of the specific findings and the conclusions; the conclusions themselves are a political plea for sociologists to accept "the postulate . . . that biology sets limits to the macro-construction of gender" (p. 454). The polemically antifeminist tone of these conclusions is also remarkable. Udry suggests, for example, that "[a] social engineering program to degender society would require a Maoist approach" (p. 454).

While it is impossible to know how the review process functioned, there are several hypotheses worth considering. One possibility is that biosociologists and sociologists of gender are understood by the editor and reviewers as talking *past* one another rather than *to* one another. If the sociology of gender is understood to occupy an entirely separate intellectual space than biosociology, no need for contact between the two literatures might be seen. This would suppose an editorial process that attempted to judge biosociology by the criteria of its own subfield, rather than demanding it be accountable to a broader sociological audience. Such an insular process, however, did not occur. The former editor did indeed send the article to two persons he considered to be biosociologists, and two persons who studied gender, as well as to an ASR Deputy Editor (Glenn Firebaugh, personal communication).

Another hypothesis is that sociological readers, including reviewers, suspend their critical faculties when confronted by descriptions of hormone levels, blood samples, and SHBG values. When Udry argues that "[i]t is important that sociologists reconcile their social constructionist models of gender with prevailing theories emerging in the biological sciences" (p. 445), his formulation implies the value claim that biological work is the more scientifically powerful and significant science. Given the culturally normative hierarchy of the sciences, even reviewers who did not particularly devalue the sociology of gender as a field or share the political perspective and values of the author might be impressed enough by his biological measures to fail to ask the appropriate questions about the adequacy of the socio-

logical theory and measures to which they are then related. But these are important questions. If what is measured in Udry's second-order factor, instead of biologically induced femininity, is actually something more like the degree of conformity to a locally specific norm of femininity, the interpretation of his coefficients and interaction terms could hardly warrant Udry's political claims: "Humans form their social structures around gender because males and females have different and biologically influenced behavioral dispositions. Gendered social structure is a universal accommodation to this biological fact" (p. 454).

A third hypothesis explaining how this article apparently slipped by the scientific gatekeepers might be due to shortcomings of theoretical and epistemological breadth among the reviewers, whatever their substantive expertise. Science that is bad in its own terms is particularly likely to escape the gatekeepers when there is inadequate inclusivity and diversity in the review process, so that "common sense" and shared stereotypes are allowed to fill in the gaps that partiality and perspective create. Shared stereotypes are very powerful cultural tools, and "biology" is frequently invoked to naturalize and legitimate contemporary social practices, even when this produces science that looks *bad* once those cultural stereotypes have changed (the womb-shrinking effects of higher education being only one of the more widely known examples). In addition, there are also cultural presumptions about the legitimacy of findings based on heavily funded longitudinal data sets, at least among those who often use them. Even among social scientists, manuscripts borne of projects heavily funded by federal agencies may carry presumptions of validity based on the very fact that they were fundable.

Harding (1998) suggests that the relative exclusion of certain groups and perspectives from the process of creating and evaluating what counts as science allows biased work that accords with the values of the included groups to not be recognized as biased. Thus, to more fully reach the norm of objectivity, in fact a norm of what she calls "strong objectivity," science needs to recognize itself as "co-constructed" with culture through the

standpoints that actual scientists bring to their work and to expand its own efforts to incorporate persons and perspectives that differ from the mainstream.

Regardless of which hypothesis is thought to be the best explanation for what I see as a failure of the review process, the problem remains that Udry's overt claims to being value-free (e.g., "I make no judgment here as to whether it is morally good to reduce sex differences, or to leave them alone" p. 453) are contradicted by the values imbedded in his conceptualization and measurement itself. This raises the broader question of whether *ASR*, or any social science journal, is guided by the positivist principle of value-neutrality. And whether this privileges the publication of certain types of research.

#### FEMINIST SOCIOLOGY, SOCIOLOGY OF GENDER, AND DOING SCIENCE

In general, value-neutrality can be a cloak that hides (perhaps even from scientists themselves) values that are so embedded in the folk wisdom of our culture as to be invisible. Researchers who believe they are working within an apolitical value-neutral version of science are, often without any conscious decision at all, simply ignoring the ways in which dominant presumptions frame their questions, or concerns, or goals (Harding 1998). When the values scientists hold are embedded in the status quo and are supportive of its hierarchies, they are not even conceptualized as values at all.

When Udry suggests that unless we have a gendered social structure (which he conceptualized in measures including women's subordination at home, in the workplace, and in daily interaction) we will "generate social malaise" (p. 454), we ought to ask "for whom?" Surely, this malaise will not generalize to those who have been fighting for years for women's equality. Perhaps some malaise will be felt by those men, including male scientists, who will have to take the work of women more seriously and share more equitably with women the elite positions at major research universities. But the values that would lead to asking the question of whose interests are being served are more readily recognized as being "values"

by virtue of their critical stance toward what is accepted as the natural way of the world. It is precisely such a challenging attitude toward the taken-for-granted in society that sociology frequently claims as its *raison d'être*. In this context, the claim to value-free sociology appears to be a justification for sociology's failure to make any effort to address the inequalities embedded in its own practices.

Science emerges from cultural world views and either supports or challenges them. Feminist scholarship expresses a commitment to science with and from a value position. This is a rejection of the belief in the possibility of value-free singular context-less scientific "Truth," but it is neither a rejection of all science nor an acceptance of relativism. As "post-positivists" (Harding 1998), feminist scholars pay more than lip service to the epistemological claim that all science simply supports or fails to support current theories and never proves anything. Many feminist scholars believe that science is always becoming, and does so based on the ideas real people with real material interests bring to the scientific table (Collins 1998, 2000; Smith 1987; Sprague and Kobrynowicz 1999). Perhaps it is post-positivist scholarship, rather than the sex of the author, that is trivialized and ignored by "value-neutral" scientists.

As a feminist sociologist, I suggest that to advance the study of gender, we sociologists must be more reflective about our own values and premises and must make sure that our commitment to challenging the taken-for-granted precepts in our own culture is represented in the manuscript review process. Weak science is and always has been used to justify the subordination of women and of people of color. Strong objectivity would necessitate all authors to compensate for their own material interests by at least taking into account—and addressing—the perspectives of those arguing from conflicting interests and discourse (Sprague and Kobrynowicz 1999). It is high time that as a discipline we have an open discussion about whether the editorial policies at our major journals privilege the allegedly "value-free" versions of science over versions of science that include value commitments to a more just world.

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## REFERENCES

- Collins, Patricia Hill. 1998. "Fighting Words: Black Women and the Search for Justice." Minneapolis, MN: University of Minnesota Press.
- . 1990. *Black Feminist Thought: Knowledge, Consciousness, and the Politics of Empowerment*. Boston, MA: Unwin, Hyman.
- Connell, Robert W. 1987. *Gender and Power: Society, the Person, and Sexual Politics*. Stanford, CA: Stanford University Press.
- Espiritu, Yen Le. 1997. *Asian American Women and Men*. Thousand Oaks, CA: Sage.
- Ferree, Myra Marx and Elaine Hall. 1996. "Rethinking Stratification from a Feminist Perspective: Gender, Race, and Class in Mainstream Textbooks." *American Sociological Review* 61:929–50.
- Gerson, Kathleen. 1985. *Hard Choices*. Berkeley, CA: University of California Press.
- Glenn, Evelyn Nakano. 1999. "The Social Construction and Institutionalization of Gender and Race: An Integrative Framework." Pp. 3–43 in *Revisioning Gender*, edited by M. M. Ferree, J. Lorber, and B. Hess. Thousand Oaks, CA: Sage.
- Harding, Sandra. 1998. *Is Science Multicultural: Postcolonialisms, Feminisms, and Epistemologies*. Bloomington, IN: Indiana University Press.
- Higgenbotham, Evelyn Brooks. 1992. "African-American Women's History and the Meta-language of Race." *Signs* 17:251–74.
- Jacobs, Jerry A. 1989. *Revolving Doors in Sex Segregation and Women's Careers*. Stanford, CA: Stanford University Press.

- Kanter, Rosabeth. 1977. *Men and Women of the Corporation*. New York: Harper and Row.
- Lorber, Judith. 1994. *Paradoxes of Gender*. New Haven, CT: Yale University Press.
- Maccoby, Eleanor. 1998. *The Two Sexes*. Cambridge, MA: Belknap Press of Harvard University.
- Meyers, Kristen, Cynthia Anderson, and Barbara Risman. 1998. *Feminist Foundations*. Thousand Oaks, CA: Sage.
- Miller, Eleanor and Carrie Lang Costello. 2001. "The Limits of Biological Determinism" (Comment on Udry, *ASR*, June 2000). *American Sociological Review* 66:592-98.
- Ridgeway, Cecilia and Lynn Smith-Lovin. 1999. "The Gender System and Interaction." *Annual Review of Sociology* 25:191-216.
- Risman, Barbara. 1987. "Intimate Relationships from a Microstructural Perspective: Mothering Men." *Gender and Society* 1:6-32.
- . 1998. *Gender Vertigo: American Families in Transition*. New Haven, CT: Yale University Press.
- Segura, Denise. 1993. "Chicano Family Structure and Gender." *Signs* 19:62-91.
- Smith, Dorothy S. 1987. *The Everyday World as Problematic: A Feminist Sociology*. Boston, MA: Northeastern University Press.
- Sprague, Joey and Diane Kobrynowicz. 1999. "A Feminist Epistemology." Pp. 25-43 in *Handbook on Gender Sociology*, edited by J. Chafetz. New York: Kluwer Academic/Plenum Publishers.
- Udry, J. Richard. 1994. "The Nature of Gender." *Demography* 31:561-73.
- . 2000. "Biological Limits of Gender Construction." *American Sociological Review* 65:443-57.

*Reply to Miller and Costello; Kennelly, Merz, and Lorber; and Risman*

## FEMINIST CRITICS UNCOVER DETERMINISM, POSITIVISM, AND ANTIQUATED THEORY

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The comments of my colleagues are eye-openers for me, for which I am grateful to them. I consider it an honor to have inspired three such heated attacks on my article from such distinguished critics. First, let me summarize what I was trying to accomplish in my original article (Udry 2000).

It is widely noted among those who study higher mammalian species that males and females of each species have characteristic differences in behavior. These differences are influenced by a common biological process, but at least in primates they are also conditioned by environmental circumstances at crucial periods in development. I wanted to test on humans the implications that fol-

low from these (mostly primate) models. Given the complexity of the human species, and the fact that research design limitations require a focus on what can be measured in a single study of a single sample, only a few elements of both the environment and the biology can be incorporated. The biological aspects studied were therefore limited to the theoretically relevant hormones to which I had access on a group of respondents: prenatal maternal androgens and sex hormone binding globulin (SHBG, their binding protein), and adult measures of the same substances in the daughters.

The environmental measures focused on the process of acquiring sex-typical behavior from parental socialization. I don't believe that parental socialization is the sole source of acquisition of sex-typical behavior, but it is a source that is generally believed to be active on everyone.

For the dependent variable, gendered (sex-typicality of) behavior, I wanted measures of behavior (and attitudes and personality) that generally distinguish male and female humans in the available population (living in the same culture at a particular time). To be comprehensive in my measure, I used the largest composite of measures ever assembled that constitute sex differences.

It is something of a miracle that I was able to find an existing sample of women on

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