

Continuing American Patriarchies

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Introduction

At the beginning of the twenty-first century, Americans are still struggling with the issue of gender equality, and with the notion of equality itself. While this century has witnessed the suffrage movement, the feminist *movements*, and the shift of women into the democratic arenas of voting, the workforce, and the proverbial “marketplace,” women have yet to secure political or economic equality. In both public and private sectors, women are underrepresented—quantitatively and qualitatively—in top hierarchical positions of power (Bonvillain 1995). Furthermore, gender disparity in the labor market remains, as is indicated by the perpetual phenomena of the wage gap and occupational segregation, despite ideological, political, and legal efforts to make the market “gender-neutral” (Faludi 1991; Pujol 1995; Rhode 1997). In light of such slow progress, the question needs to be raised, and indeed, it has been raised, why has gender equality been so elusive in America, a democratic country founded upon the ideal of equality?

While acknowledging that significant large-scale change takes time, feminists have argued that deeply entrenched patriarchal worldviews, exacerbated by a vehement backlash against feminism, have impeded progress (Faludi 1991). Gender equality has not been secured, they contend, because the necessary institutional changes are advanced begrudgingly, and often perceived as threatening to the social order.

But there is a counter-analysis gaining currency in the American debate which simultaneously explains the impasse while providing an ideological barrier to change: it is the claim that gender equality has not been achieved because, as we have known all along, *men and women are not equal*. Therefore, achieving gender parity is impossible. It is this repackaged ideology of inequality, its scientific construction, its impact upon our notions of gender, and its power as a controlling mechanism—that is the focus of this paper.

The assumption that American society should remedy gender inequality requires a conceptual framework in which “equality” is deemed a desired and achievable goal. However, two powerful contemporary paradigms, sociobiology and neoclassical economic theory, combine to undermine these ideological premises. Sociobiology explains individual and social behavior as being determined by biology (sometimes referred to as biological determinism), while neoclassical economic models predict behavior as efficient outcomes determined by competing market

forces. Both models frame gender inequality as being independent from cultural forces, and therefore, beyond the realm of normative debate. Within this decontextualized analysis, cultural forces that enforce traditional gender roles are typically omitted from the equation. If cultural forces are acknowledged, they are seen not as the cause of gender inequality but as the effect of biological factors and rational choices.

This paper will begin by examining biological determinism and neoclassical economic theory separately in order to explore the structure of the models and their underlying assumptions. Then the two paradigms will be compared for their parallel and “interlocking” ideologies (Nader 1997:722). With stereotypical biological assumptions woven into economic models of behavior, and competitive models projected onto biological studies, the two paradigms exchange gender stereotypes, compounding their legitimization. The resulting “scientific” or “objective” analyses of gender disparities do not reveal a systemic problem, since natural inequality is a shared premise.

Biological and economic theories buttress our culture’s gender norms, lending the air of scientific authority to traditional roles. This potential for bias in science has been a primary target for feminist critique: while scientists have been studying why men and women behave as they do, feminists have been researching why scientists study men and women the way they do. In addition, anthropologists have studied the culture of science itself, even looking within their own discipline to examine how knowledge is gathered. Therefore, before delving into the two models, it will be useful to discuss how anthropology has explored the scientific construction of gender and the role of science in culture.

Feminist Anthropology — Deconstructing Scientific Narratives

The primary contribution of feminist anthropology, according to anthropologist Henrietta Moore (1988; 1994; 1997) has been to separate “sex” from “gender”—in other words, to differentiate between biological sexual differences and the socially constructed binary gender categories that are attributed to these differences (Bonvillain 1995; Morgen 1989; Rosaldo 1974; Sanday 1990; Susser 1989; Tiffany 1979; Warren & Bourque 1989; Yanagisako & Collier 1990). To accomplish this task, feminist anthropologists have collected ethnographic data about gender in order to challenge notions of “universals.” Through cross-cultural comparisons, they have described how different cultures construct gender categories, emphasizing variability in order to undermine claims of biological determinism (Bonvillain 1995).

However, while finding a broad range of gender-associated behavior, feminist anthropologists from Margaret Mead to Simone de Beauvoir have been confronted with the apparent universal submission of women (Ortner 1974; Rosaldo 1974;

Sanday 1990; see analysis of Rosaldo and Lamphere's work in Morgen 1989). Explanations for the prevalence of male domination have included analyses of specific cultures (for example, analyses of kinship or the division of labor within various types of societies) as well as critiques of the "representation" of women's activities by those who have analyzed cultures with an outsider's perspective (i.e., missionaries, soldiers, and most importantly, anthropologists—Bonvillain 1995). Arguing that anthropology was historically a male-dominated discipline, feminist anthropologists have questioned the biases through which ethnographic data have been filtered, and they have gathered their own data.

Pointing not only to the diffusion of patriarchy through colonialism as one reason for universals, feminist anthropologists have cited male-centered ethnographic work and the imposition of Western analytical frameworks upon vastly different cultures. By devaluing the activities of women in other societies and by accepting the colonizers' gender stratification as traditional, early anthropologists had interpreted the universality of male dominance to be biologically based (Bonvillain 1995). In addition, theoretical constructs such as the man-the-hunter/women-the-gatherer hypothesis, which proposes evolutionary reasons for a gendered division of labor, have been challenged by feminist anthropologists for being speculative, inherently male-biased (Zihlman 1989), and imposed upon data instead of resulting from research (Cartmill 1994).

Anthropologists such as Nancy Bonvillain note the connections among biological determinism, capitalism, religion, and economic theory as different facets of American patriarchy. As women have increased their numbers in the workforce, she argues, patriarchal ideologies have continually resurfaced with new experts to promote them:

Patriarchal social relations and capitalist economies are interconnected. Of course, patriarchal systems predate capitalism and exist in cultures without capitalist economies, but as capitalist economies developed, they incorporated and utilized preexisting patriarchal relations—and they continue to do so today. [Bonvillain 1995:170]

She finds that both men and women are constrained by their roles as breadwinner and mother respectively, but she emphasizes "as a group, men receive benefits from capitalist systems" (Bonvillain 1995: 171).

In looking at controlling ideologies, feminist anthropologists have already begun to deconstruct the biological narrative. In addition, they have studied another powerful complex of ideologies that are intimately linked with neoclassical economic theory—capitalism and "development" ideology (Warren & Bourque 1989). Cross-cultural studies of the detrimental impact of globalization upon women's lives have

fueled critiques of capitalistic growth models (which assume that increased commerce, specialization, and competition will improve the quality of life in any culture). And as development ideology is inherently diffusionist, it provides anthropologists with the opportunity to look at the spread of this ideology, but it also provides the opportunity to study its production in the United States and its impact upon American women (Bonvillain 1995).

Cultural Control

Anthropologists have explored the power of ideology as a controlling mechanism, and it is within the context of “cultural control” (Nader 1997:719) that I examine the contemporary hybrid scientific/economic formula for inequality. “Cultural control” is the covert manipulation of segments of society through mechanisms such as ideas, whereas “social control” is the more obvious and direct control through mechanisms that involve relationships or groups (Nader 1997:719).

In her essay “Anthropology and the Cultural Study of Science” (1998), Emily Martin stresses the complexity of scientific knowledge production and the perpetual interaction between scientists and non-scientists (Martin 1998; see also Feyerabend 1978; Nader 1996). She explains that the anthropological study of science should examine how science and culture shape each other, claiming “give anthropologists a culture, and we will show how utterly science and its laboratories are entangled in it” (Martin 1998:43). As paradigms that intertwine and reinforce each other, biological and economic explanations justify gender inequality as a natural and rational condition beyond the scope of social intervention.

Simply stated, sociobiology explains why men and women are innately different, and building upon this premise, economic models explain why male traits are more valuable in the market. Within this patriarchal equation, the logically consistent conclusion is that gender equality is unattainable. Society cannot change innate characteristics, nor can it tamper with market forces; therefore, attempts to impose equality will be either ineffective or destructive.

Current debates about legal intervention reveal a conflict, which is explicitly articulated, between the democratic ideal of equality versus perceptions of natural inequality (Posner 1998). At issue is the degree to which society can mitigate the biological reality of gender differences, and at stake are vast political and economic resources. In practice, the question becomes whether American society should hold the market up to the standard of equality, or whether equality should be pursued only when it is deemed “efficient” and when the equality of American citizens has been “scientifically” proven. By looking at the prevalence of sociobiological arguments in the public debate, one can begin to see the power of this ideology to discourage corrective action on multiple levels, from the state to the individual.

Focusing specifically upon the disciplines of biology and economics, I examine the power of scientifically constructed patriarchal ideologies as mechanisms of cultural control. This analysis builds heavily upon Laura Nader's study of controlling processes, which she defines as "the mechanisms by which ideas take hold and become institutionalized in relation to power" (Nader 1997:711; 1994). As Nader notes:

What we see depends on what we know, and what we know depends in great part on how knowledge or knowing is produced and by whom and when and how it is filtered by experience. In industrialized countries such as the United States, culture appears natural and inevitable, even when it is made to appear so by the manipulation of cultural images that often articulate what people should be, should think, should buy or buy into. The belief in free will is strong and impedes understanding how lives are changed by cultural practice external to the individual that seeks to modify individual behavior by means of cultural inventions. [Nader 1994:3]

Biological and economic theory are particularly important in this process of constructing reality because "gender" is typically considered biological and inequality is frequently measured in economic terms, and also because in the larger context, biological determinism and profit-motive rationalizations are increasingly imposed upon political discussions of all kinds. In a country with a steadily growing reliance upon standardized testing (Sternberg 1999) and upon economic analyses of public policy, merit and success are framed as being scientifically and economically quantifiable.

To the degree that they construct a patriarchal reality, claims about gender difference in biological and economic theory are hegemonic¹. Assumptions about gender roles are built into conceptual models, and these models filter knowledge-gathering so that empirical data is interpreted to confirm traditional stereotypes. In turn, the stereotypes are internalized, further perpetuating stereotypical behavior and performance (Shih, et al. 1999).

Genetic Data and Constructions of Gender—Framing Scientific Inquiry

Today, we increasingly look to science to explain what it means to be human: at a time when geneticists are beginning to map the human genome, many are ready to accept the notion that science can provide an objective understanding of both the human body and of human behavior. Through what Troy Duster calls "the prism of heritability," we tend to filter genetic discoveries into deterministic explanatory models, embracing genetic explanations for behavior, however tenuous they may be

¹ See Nader's discussion of hegemony as defined by Antonio Gramsci (Nader 1997:721)

(Duster 1996:119; Beckwith 1996; Duster 1998; Ehrenreich & McIntosh 1997; Fausto-Sterling 1985; Hubbard 1990; Marks 1995; Nelkin & Lindee 1995). In addition, genetic explanations have been popularized by today's media, which continually publicizes scientific claims about innate human tendencies (Herrnstein & Murray 1994). The proliferation of such reports only contributes to a climate of receptivity for claims of biological determinism.

This often uncritical acceptance of biological explanations is particularly evident in current discussions of "innate" gender differences, in which stereotypical notions about men and women are given new scientific grounding. While there are obviously physiological differences between men and women, the degree to which these differences are interpreted to determine behavior is a politically-charged issue because statements about gender differences in ability, cognition, and intelligence necessarily have political meaning in a social context (Fausto-Sterling 1985; Hubbard 1990; Marks 1995). But the recent push to identify biological gender differences in order to apply deterministic theories about gender-based behavior is nothing new. It merely represents a resurgence of reliance upon scientific authority, combined with new technologies, fueled by a political climate which is favorable to reestablishing the traditional status quo (Beckwith 1996; Duster 1998).

Genetic Reductionism and Biodeterminism

Reductionism is a mechanistic approach that looks at the smallest components of an organism in order to understand the whole; in biology, the approach has been applied to the search for the genetic causes of behavior. Since reductionism and deterministic models are permeating current discussions about "human nature," it should not be surprising that they are invoked to explain innate gender differences (Hubbard 1990). However, there are problems inherent in both the conception of reductionism and in the social application of these models. While focusing upon the gene as a unit for study has led to useful discoveries in DNA sequencing and gene cloning, applying the genetic reductionist paradigm in order to explain the complexities of the entire human being—as well as extrapolating these claims to the larger human society—exaggerates the current state of genetic knowledge and imposes an overly simplistic explanatory model upon complex human processes (Beckwith 1996; Fujimura & Fortun 1996). Regardless, as Jon Beckwith (1996) observes, the reductionist model has found acceptance beyond the field of molecular biology:

The reductionist approach of focusing on genes has worked for a host of previously intractable biological problems. However, accompanying this transformation of biology has been a strengthening of the extreme reductionist position both toward the science itself and its social applications. As with the period that

initiated genetics at the turn of the century, the successes of the science have been translated into a world-view. [Beckwith 1996:177]

Within this current world-view, the genetic code is heralded as the key to understanding human beings and our societal problems, and thus, genetic research is viewed as the preferred, more scientific, path of inquiry (Duster 1996; Hubbard 1990).

Therefore, critics of genetic explanations for gender differences often confront the validity of the reductionist model itself in order to refute deterministic arguments. Biologist Ruth Hubbard (1990) argues that reductionism, and even its theoretical counterpart “holism” (which frames the entire organism and its surrounding environment as a whole system), are inadequate models for understanding the human organism. This is because in considering the multiple organizational levels of an organism, “subatomic, atomic, molecular, cellular, organismic, and societal,” both models assume a hierarchy in which either the micro or the macro level reigns supreme. In other words, reductionism is a “bottom up” theory which points to the smallest units as behavioral determinants, while holism assumes that the highest level, the organism or the environment, plays the dominant role (1990:64). As a framework for understanding human development in general—and gender differences in particular—Hubbard advocates “transformationism” (1990:69). Within this dialectical model, biological and environmental factors are assumed to be interactive: through constant interaction, an organism changes its environment, and the environment changes the organism.

Hubbard goes on to argue that due to structural inequalities in our society, men and women are transformed differently by their environments. Because men and women’s environments differ greatly in terms of cultural expectations, resources, and opportunities, measurable *biological* differences can emerge, differences that are not determined strictly by genes. For example, different diets, exercise, and lifestyles have a differential impact upon height, weight, and musculature. Therefore a focus upon innate male/female differences in these areas might be flawed on two counts: not only does it necessarily downplay within-group variation, but it ignores the environmental factors in development (Fausto-Sterling 1985; Gould 1996; Hall 1985; Marks 1995).

Gendered Brains and Temperament

Among the most charged debates about gender differences are claims about the relative capacities that men and women—as groups—have for aggression and intelligence. Compared to women, who are claimed to be naturally nurturing and cooperative with strong verbal and relational skills, men are said to be aggressive and competitive (even ambitious) with better mathematical, analytical, and spatial ability (Fausto-Sterling 1985; Hubbard 1990; McGuinness 1985; Pool 1994). Downplaying environmental and social factors, genetic arguments are given to explain these observed differences: genes dictate divergent sexual development and the differential

production of androgens and estrogens, and their impact upon brain development in utero leads to different brains, resulting in different thinking and behavior (Fausto-Sterling 1985; Marks 1995). Moreover, innate gender differences in hormonal systems continue to cause divergent behavior and cognitive ability.

Anne Fausto-Sterling (1985) argues that not only is the attempt to define and measure traits such as “aggression” and “intelligence” inherently problematic, the complexities of the human organism defy simple reductionism when it comes to linking a particular trait to a particular gene:

If we define a trait or phenotype at the level of the translated protein, and if we consider all those genes involved in regulating the rates of synthesis and breakdown of both the specific protein in question and proteins in general, we can roughly state that the genotype determines the phenotype. If instead we consider more complex traits, occurring at supracellular levels of biological organization, the relatively simple correlation between genotype and phenotype breaks down. [Fausto-Sterling 1985:77]

In addition to the complexity of the organism, the variability of human development in response to environmental factors must be included in any causal equation. Framing brain development as genetically determined ignores the role of the environment in utero, as well as the environmentally-interactive nature of brain development—by way of “pruning” neural pathways—that shapes the brain from birth through adult development (Goleman 1995: 224; Fausto-Sterling 1985; Hubbard 1990; Marks 1995).

The reductionist focus on discrete causative factors can lead to oversimplifying the system: an analysis that connects the dots, so to speak, without taking the whole system into account (Hen 1996:20). Yet, it can also leave room to impose a pattern that is not there, such as in a constellation, where one can select the dots to connect. For example, feminist critics claim that the study design and interpretation of data in hormonal studies are often filtered through a prism that recasts the stereotypical narrative. Hormones, which are claimed to cause different aggressive behaviors in men and women, are part of complex neuroendocrine systems that fluctuate continuously in response to external stimuli, such as stress-inducing situations (Bonvillain 1995; Fausto-Sterling 1985). Yet much of the focus has been on one hormone in particular, testosterone, of which its significance in explaining male behavior (and female behavior by omission) is greatly exaggerated. One key study of testosterone fluctuation showed that merely winning a tennis match raises testosterone levels in the victor, as long as *he* (only men were tested) experiences an “elation in mood” for winning (Mazur & Lamb 1980). Yet rather than emphasize the complexity of hormonal systems, the researchers found support for a correlation between an increased testosterone level and dominant male status (Mazur & Lamb 1980). As in

most studies about the effects of testosterone, the researchers interpreted data so as to reinforce the simplistic male aggression model.

Differences between men and women in aggression or cognitive ability are often attributed to the effects of testosterone versus estrogen, however there have been very few studies that directly compare the hormonal levels of men and women (Fausto-Sterling 1985; Pool 1994). Studies are typically same-sex, in which fluctuations in women's cognitive ability during the menstrual cycle or differences in aggression due to men's testosterone levels are tested independently. Finally, studies often rely on the subjects' self-reporting of "aggressive" behaviors, which necessarily injects subjective and culturally bounded assessments (Christiansen & Knusmann 1987:177).

Another line of reductionist reasoning points to the role of evolution and natural selection: sociobiologists combine reductionist arguments with evolutionary theory to advocate genetic determinism. Men and women, they argue, naturally use different sexual strategies to spread their genetic material—"universals" in observed gender differences (again, male aggression and female nurturance) represent (and are proof of) adaptive strategies which ensure the survival of adaptive traits (Hubbard 1990:65; Degler 1990; Fausto-Sterling 1985). Furthermore, sociobiologists claim that many of these sexed-based universals in sexual strategy, such as male aggression, promiscuity, and even rape, can also be observed in animals, which implies that in our genetics and evolutionary history lay the biological foundation for these behaviors.

However, critics refute these claims by arguing that sociobiologists *create* the universals they are looking for by imposing these categories upon observed behaviors: not only are varied human and animal behaviors encapsulated under the single categorical label "aggression," but the very meaning of the politically-charged word "rape" is necessarily distorted by the act of applying it to animal behavior (Fausto-Sterling 1985; Hamilton 1985; Hubbard 1990; Marks 1995). Secondly, looking to evolutionary history to explain behavior is inherently dubious, because as Ruth Hubbard notes, "behavior leaves no fossils" (Hubbard 1990:67).

Comparisons between animal and human behaviors, such as aggression, are obviously problematic because differences in behavior can be called upon just as easily as can similarities. But nevertheless, animal studies are used to reinforce genetic research into human behavior, which are in turn used to explain innate gender differences. As the technology in molecular genetics advances, the reductionist-based chain of logic in these comparisons can become quite strained. A gene, or the absence of a gene, is thought to be a determinant of a specific behavior in an animal, often a rat or mouse. The animal gene is then compared to a possibly homologous human gene, which in turn, is surmised to be a determinant of a comparable complex human behavior (Hen 1996). Of course, it is the scientist who must decide what is comparable behavior.

Claims of innate differences in cognition are even more problematic than claims about aggression, and in terms of potential political applications of determinism, there is more at stake. But the validity of measuring innate cognitive ability is challenged by critics on multiple fronts: both the definition of “intelligence” and its testing are socially-constructed (Goleman 1995), the brain develops interactively with the environment (Fausto-Sterling 1985), and measurements of one’s *performance* does not necessarily indicate one’s *ability* or *potential* (Marks 1995:109; see also Bouchard 1998). This last logical criticism is particularly powerful for undermining the assumption that observed differences in cognitive performance can be directly correlated to innate ability. A tremendous amount of environmental factors must be controlled for before any genetic claims can be made. Another key criticism is that claims about the supposed intelligence of one group (race or gender) versus that of another are misleading: the individual variation *within* these groups is greater than the between-group variation (Gould 1996).

Differences in brain structures of men and women have been found, but their significance is not clear, and research data is often contradictory. Men have larger brains than women on average (this is largely accounted for because of the difference in average heights), but a correlation between brain size and intelligence has not been found (Fausto-Sterling 1985; Pool 1994). As for features of the brain, a pivotal study in 1982 (DeLaCoste-Utamsing 1982) found that the corpus callosum was more “bulbous” in women than in men; yet the validity and relevance of these findings has since been repeatedly tested, challenged, and even controverted (Allen, et al. 1991; Kertesz, et al. 1987).

Applying a study design that emphasizes between-group differences is inherently dubious, and once the scientist finds expected differences, there is the further chance of distortion by interpreting the meaning of differences. Particularly when looking at the study of gender differences in intelligence and cognition, it is instructive to recount historical biases to understand the power by which framing the experimental question shapes the data. For example, while the correlation of brain size to intelligence has not been found, in the early brain studies at the turn of the century, scientists presumed that men are innately more intelligent than women (Fausto-Sterling 1985). Starting with this premise, these men of science developed theories about differences in brain size in order to explain intelligence differences, such as the greater size of the average male brain or comparisons of the sexes’ brain-to-body ratios. However, only when these theories resulted in granting other members of the animal kingdom (elephants and birds for example) greater intellect than man, did the scientists adjust their theories (Fausto-Sterling 1985). And when developing standardized intelligence tests, men of science essentially proved the tests’ subjective malleability. When women scored higher on early IQ tests, scientists *recalibrated* their tests to correct for this perceived error (Fausto-Sterling 1985).

Poor study designs combined with weak linkages in reductionist theories about complex organisms continue to result in gaps or flaws in the data, gaps and flaws which may be filled in or finessed. Considering the universe of possible study designs, it is necessary to examine why certain designs are chosen and to see if there are patterns of bias. It must also be remembered that the designs that are selected may be manipulated or discarded until the scientist finds what he or she is looking for.

Genetic Explanations and Scientific Objectivity

The scientific study of gender is double-edged because science can be used to refute or defend stereotypical notions, depending upon the cultural values and assumptions framing the interpretation of data (Fausto-Sterling 1985; Hubbard 1990; Marks 1995). While the objectivity of science is a primary assumption upon which the validity of genetic explanations rest, scientific models are susceptible to the ideologies of the culture in which they are developed and can easily be molded to confirm what we *already* believe about human behavior. As Jonathan Marks (1995) observes, we are inclined to give claims that scientists make about human beings more credence than we would give to claims made by any other people; but scientists, and therefore, scientific claims, are vulnerable to the influence of cultural values:

as the pronouncements of scientists, these ultimately cultural values would subsequently be vested with the authority of science. The culture can consequently produce the values that the scientist validates, thus proving that the culture was right all along. [Marks 1995:2]

In this manner, social constructions of gender can become reified through scientific validation, and traditional gender roles become naturalized.

Genetic determinism is making a comeback, in part, because even vague relational claims linking behavior to “genetics” sound more scientific than mere appeals to traditional gender roles. Deterministic arguments are presented as though they are keeping pace with current technology, and this trend is not limited to discussions about gender. Although there has been a recent explosion of genetic explanations in popular and scientific publications alike, most of those making genetic claims in scientific journals are not geneticists (Duster 1996). Based upon a study of articles in current scientific journals *in the field of genetics*, only about one-fourth of the authors “could be regarded as credentialed in human genetic or cytogenetics, or a genetic field of any kind” (Duster 1996:120).

In addition, the very notion of scientific objectivity plays a special role in discussions of gender because the objective, mechanistic, reductionist, rational, biological model seems to parallel the stereotypical attributes of masculinity. Within this analytical framework, critics argue, women are cast as the other and compared to

the male biological standard, women are found to be different, with lesser valued physical and emotional characteristics (Fausto-Sterling 1985; Martin 1991).

Emily Martin finds evidence of male bias in the very narrative of biological literature, especially in descriptions of sexual development, and the implications are not only that “female biological processes are less worthy than their male counterparts but also that women are less worthy than men” (Martin 1991:486). One of the most striking examples of a gendered narrative is exposed in Martin’s article, “The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles” (1991). In the language of scientific literature, the egg and sperm are transformed into anthropomorphised microcosms for woman and man — a reductionist mythology about the gender dynamic played out on a zygotic scale. The female egg is continually cast as the passive receptacle for the aggressor sperm’s genetic material, despite all evidence to the contrary.

Concerns over the political applications of genetic research are not unwarranted— historically, claims of innate biological differences that cast a woman’s body in pathological terms have had tangible and significant impact on institutions from medicine to law and public policy. At the turn of the nineteenth century, the medical and psychiatric professions linked mental illnesses such as “neurasthenia” and “hysteria” to malfunctions in women’s reproductive organs, and as a consequence, medical treatments for women diagnosed as mentally ill included removing the ovaries and applying electrical charges to the uterus (Geller & Harris 1994: 98). Furthermore, while traditional public policy measures designed to “protect” women by restricting their role in the workforce appear to have waned, the notion of biological gender difference remains a key factor in the American court system’s treatment of gender discrimination and equal protection (Kay 1990; Kopytoff 1990; Rhode 1990 & 1997; Taub & Schneider 1998).

And paradoxically, while the biological sciences have continually overemphasized gender differences to promote notions of inequality, they have only just recently begun to conduct appropriate levels of medical testing *on women* to provide comparable healthcare. As a result, much of the current medical understanding of pathologies, treatments, and the effects of pharmaceuticals have to be revised to take into account gender differences (Ziegler 1998). Often, women’s complaints of physical symptoms are dismissed as being psychological. Even worse, women are systematically underdiagnosed for heart and kidney disease and lung cancer, which obviously can be life threatening (Ziegler 1998).

Critics, such as Martin (1998), Fausto-Sterling (1985), and Hubbard (1990), argue that a male bias in the biological sciences shapes both the structure of the research as well as the interpretation of the data. Assumptions of traditional gender roles frame the inquiry to look for gender differences in the first place, or more specifically, to look at hormones such as testosterone or estrogen in isolation in order

to prove direct links to presumably gender-based behaviors. They claim that there are more similarities and overlap than there are differences and that culture and biology are too intertwined to isolate genetic roots for behavior. Focusing upon biological differences is more of a political endeavor, they argue, which leads to conservative conclusions about the possibility of effecting social change.

Neoclassical Economics—A Patriarchal Model of and for Behavior

In its treatment of gender, the neoclassical “free-market” model builds upon sociobiological foundation; and as economic theory is greatly influential in matters of law and public policy and it functions as an extension of biological theory, translating scientific models into social control. Within free-market ideology, economic inequalities are framed as apolitical conditions of the market, which result from rationally-based market transactions.

To provide a rationale for the historical disparity in economic status between men and women, the standard economic model devises two different notions of rational behavior: men and women have innate differences giving them different economic needs. Biologically based gender differences or preferences, not discrimination, are responsible for differential treatment, occupational segregation, and economic disparities (Beasley 1994; Bonvillain 1995; Donohue 1997; Jacobsen 1994; McCaffery 1993; Mensch 1998; Polachek 1995; Pujol 1995; Trzcinski 1995). From this analysis, what appears to be an imbalance due to systematic social injustice is actually the delicate and rational balance of market equilibrium.

Feminist critics of the neoclassical market model argue that in addition to incorporating traditional gender stereotypes, the model is structurally gender-biased (Beasley 1994; Jacobsen 1994; Pujol 1995). The combination of assigning traditional gender roles with a model that is designed to be compatible only with the *male* role creates a conceptual framework that rationalizes gender inequality. Like the body in the biological reductionist model, the market functions as an organism led by the actions of its smallest components, in this case, individuals. It is the mechanistic and simplistic nature of this market model, critics argue, that frames economic behavior in a manner that both ignores important cultural variables and assumes idealized motives for human behavior.

The Idealized Free-Market Model

Within the arena of pure competition, the “Rational Economic Man” is motivated by self-interest and makes rational economic choices based upon a cost/benefit analysis of his economic incentives (Beasley 1994; Jacobsen 1994; Pujol 1995). *He* makes these economic decisions of his own free will, based upon true economic needs that cannot be artificially created nor manipulated by cultural forces. When he enters the labor market, the “public” realm of society, he can freely

exchange his labor and productivity for a wage that is determined by the laws of supply and demand. Because the market is a meritocracy, he will be hired, paid, and promoted based upon his marginal productivity, which is advanced by his personal investment in his own human capital (in the form of education and training). Stratification of individuals and economic inequalities will arise due to differences in each individual's productive output. Through the course of these rational economic interactions, the market will reach equilibrium; in contrast, government intervention would interfere with the efficient motivations generated from individual self-interest, resulting in inefficiency.

Of course, this representation of the standard economic model is more simplistic than those that most economists would advance, and there are divisions within the discipline about what additional social factors should be included (Jacobsen 1994), but it is useful as a point of analysis in that it encapsulates the basic assumptions of the free-market model (Friedman 1990). At issue in feminist criticisms are the standard assumptions of rationality, free will, individual choice, and the correlation between productivity and wage.

The model is inherently mechanistic, which draws criticisms of imposing a model of behavior that emphasizes simple economic forces over complex cultural forces. The simplicity of the model, critics argue, depends upon its maintaining a decontextualized, ahistorical, and narrow analysis of an individual's motivations and behavior. The notion of power, for example, is not included in the model (Posner 1992:30), yet as power dynamics are a social reality, they necessarily undermine the assumptions of free-will, the free exchange of information, and choice.

In addition, because the free-market model is presented as a scientific model of behavior, economists receive the standard criticisms directed at notions of scientific objectivity in representation (Levin 1995). The Cartesian epistemology of neoclassical economic theory is challenged because it presumes the existence of objective knowledge, knowledge that the economic agent evaluates in his decision-making. Feminist economists argue that all knowledge is socially mediated, and furthermore, that there cannot be a transcendent, presocial, objective economic agent (Beasley 1994; Levin 1995; Pujol 1995).

The Rational Economic Man

"Rationality" is problematic not only because it assumes the economic agent has access to information, but because it negates the role that emotion plays in conveying information (Levin 1995; Pujol 1995). Since emotion is traditionally associated with the feminine role, by devaluing emotion relative to reason, this model implicitly devalues emotion as the inferior feminine counterpart to reason (Nelson 1992:106). Furthermore, the dismissal of emotion as a motivating factor denies the complexity of the interpretation of knowledge. Feminist economists argue that

emotion is integral to knowledge and understanding, and that just as knowledge cannot be value-free, it cannot be free of emotional content (Jaggar in Levin 1995).

The rational economic man is assumed to make decisions as an individual, placing women at a disadvantage due to their culturally enforced familial constraints. While men are cast as autonomous competitors, women are expected to care for the family, thus contradicting the rational agent ideal of unfettered individuality: their motives cannot be primarily self-interested (Pujol 1995). Michèle Pujol explains this conundrum:

women are seen as irrational, not because they act against the laws of economic rationality, but because they are not allowed to act rationally, or because they act in contravention of the roles that are prescribed as 'natural' for them. Taking this further, it seems that women's access to economic rationality is perceived as a threat to the economy and society. [Pujol 1995:29]

By remaining in the labor force, women upset the ideal balance at home and in the market, which has been presented as a destabilizing situation from the beginning in neoclassical economic theory.

This is not to mention the early theoretical "public/private" split between the family and the market. Domestic labor done in the home has since been categorized as existing "outside" of the marketplace, and only wage labor has been included economic analysis. From this standpoint, maintenance of the family is at odds with the needs of the labor market, and since this unpaid duty is a woman's natural role as mother, women are the less desirable worker. Women are naturally less committed to the labor market, because as potential mothers, they must plan on leaving the labor market temporarily to raise children. Wage differences reflect a rational choice made by employers to compensate for the risk of hiring women, since all women are theoretically potential mothers.

Women are therefore seen as economically dependent upon men, having a "comparative advantage to stay home" (Becker in Pujol 1995). Agreeing that the market economy has not been family-friendly, critics point out that only women are forced to bear the brunt of this incompatibility (Beasley 1994; Pujol 1995). The power asymmetry within the family unit is not incorporated in the analysis of the gendered division of labor. Men are not expected to leave the labor market to help raise children. This cultural expectation is presented as an innately determined given in the economic equation. However, even if the perceived needs of women were included in the model, it would reveal that there is a demand for a family-friendly workplace that is not being supplied by the market. This could be interpreted as a market failure, not as an inevitable consequence of rational market forces.

As for its historical context, the free-market model is like any other theoretical conception, the product of human design, and its development can be examined by looking at the behavior and attitudes of its creators. Feminist analyses of the origins of neoclassical theory show that gender bias was (not so subtly) built into the model at the turn of the century (see Pujol 1995). Women's entry into the labor force, for example, was described by one leading economist as "a debacle, ultimately ruinous alike to wealth and family life" (Edgeworth quoted in Pujol 1995: 19). These patriarchal biases could be seen in the early economists' contributions to public policy, where explicit claims about the limitations of women were converted into restrictive legislation. According to feminist critic Michèle Pujol (1995), the "founding fathers" of neoclassical economics—Marshall, Pigou, Edgeworth, and Jevons—advocated prohibiting mothers of young children from working in factories, were against setting minimum wages for women, and did not support equal pay legislation (Pujol 1995).

Furthermore, Pujol argues that the early characterization of women as mothers has not changed recent claims that women have a "comparative advantage" to stay at home, revealing a return to the theory's Victorian roots:

this characterization leads economists to see women as non-autonomous agents. For Pigou, the main determinant of (all?) women's labor supply is their husbands' labor income. In modern/Beckerian neoclassical economics, women seek employment as the result of a "household decision." One can wonder if, in neoclassical economics, the decision to seek employment is an individual decision for women. Clearly such an approach allows us to avoid asking why women continue to supply their labor when: their wages are so low; such a decision might reflect an individually non-optimal use of their productive abilities; and women are not allowed by market conditions to optimize returns to their human capital investment. [Pujol 1995: 19]

In other words, the incompatibility between the notion of the rational economic man and the cultural reality of American women is the legacy of gender constructions made at the turn of the century: a women cannot be the rational economic man because she is theoretically dependent upon him.

Merging the Two Models—The "Bioeconomic" Approach

With the competitive free-market model, differential outcomes in the economic success of individuals are attributed to differences in productivity and differences in making economic decisions. In the case of historical gender disparities, the cause of these differences is typically dismissed as a given or explained with a genetic rationale. While some factions within the economic discipline point to

cultural forces as giving women different economic incentives (Beasley 1994; Donohue 1997; Jacobsen 1994; Polachek 1995), sociobiological arguments are still prevalent in standard economic theory (Epstein 1993:80-88; Friedman 1990; Posner 1992).

In his book *Sex and Reason* (1992), Richard Posner, the current leader of the Law and Economics movement, states that legal reform “requires knowledge.” In his pursuit of objective knowledge about sexuality, Posner incorporates both biology and economics, in what he calls a “bioeconomic” approach (1992: 437, 442). In order to develop his “rational-choice” theory about sexuality and gender difference, he builds upon theories from evolutionary biology, which he notes is “a parallel mode of inquiry to economic analysis” (108).

And as economist Esther Redmount (1995) notes, the gendered nature of the market model has strong sociobiological foundations:

Explaining why work is so highly gendered is of less interest here than acknowledging the existence of patriarchy and modeling the returns (positive or negative) to being gendered. Most economic stories about how gender came to be established begin in household production models with technologies favoring division of labor (hierarchical or not) by gender or are variants of E.O. Wilson’s story about women’s comparative advantage in child-rearing and nurturing. [Redmount 1995: 217]

A binary construction of gender in the market, feminist economists argue, oversimplifies the complexities of gender and how gender affects an economic agent’s choice. For example, standard analyses of occupational segregation recognize that technological careers are more valuable to the market, as is indicated by the wage gap, but the reasons *why* the market values traditionally “masculine” endeavors (science, engineering) over the “feminine” (humanities) are not addressed.

Reproductive roles do not explain why women would invest considerable time to educate themselves along traditional career paths, knowing that non-technical jobs are typically lower paying. To address this disparity, economists point to gender differences in job *choice*, implying that women naturally (in the deterministic sense of the word) prefer non-technical jobs. These assumptions would undermine the probability of economic success for women if the neoclassical model were imposed upon social policy. One characterization is that women are innately more cooperative and less aggressive than men (Epstein 1993:84-88)—which might be considered a positive trait in a society with a different dominant economic model—but in the United States, being less competitive is a disadvantage according to the current economic ideology.

Critics argue that economists step outside of their area of expertise by invoking biological arguments as underlying tenets of their theory. Nonetheless, it is a device for presenting themselves as being detached, objective, and scientific (Jacobsen 1994; Levin 1995; Pujol 1995). To account for obvious gender disparities, economists have traditionally been drawn to simple explanations, preferring genetic predispositions to theoretically messy cultural forces.

For example, there is the historical tendency of gendered occupational segregation: men gravitate towards technological and “blue collar” jobs while women gravitate towards non-technical and “pink collar” jobs (Jacobsen 1994). The reasons for this tendency of pre-labor market segregation, which is considered self-segregation, were traditionally framed as due to innate ability. Over time, the reliance upon scientific authority to support these sociobiological assumptions has increased, with more streamlined prose. It is no longer just common sense that dictates gender roles, but now evolutionary biology and sociobiology (Posner 1992). Now different reproductive “sexual strategies” determine different economic decisions.

Today’s women have put substantial effort into education to increase their human capital pre-labor, and it has not yet paid off in equal wages. The answer given is that women have made the wrong choices, most likely due to innate differences. Young men are currently “choosing” to go directly from high school into high paying technical jobs, while women are “choosing” to go spend time in college building educational capital to make just a little more than men with a high school diploma (Koerner 1999:49). Women are now the majority at most colleges, except at the top Ivy league schools where men still dominate, and outnumber men in life sciences, although still remain far behind in engineering (Koerner 1999:50). Interestingly, women are such a majority at colleges, that *men* are receiving the benefit of affirmative action in admissions (Koerner 1999:54). Even before high school, girls are doing more homework while boys watch more television, yet boys do better on standardized tests (Koerner 1999:53). Given this information, it is understandable that if one’s analysis omits consideration of cultural forces and discrimination that one might construe innate gender differences, but such omissions themselves are a deliberate choice in conceptualization. Informed by the historical context of discrimination, power, and the process of internalization (for example, internalized stereotypes have been shown to directly impair performance on standardized tests; Shih, et al 1999), economists would necessarily have to come to different conclusions about innate abilities and the need for intervention.

Yet occupational segregation is given as proof of innate differences, as is the wage gap given as proof of women’s lower productivity (Donohue 1997). This circular reasoning, feminists argue, discourages efforts for proactive public policy—it is the model imposed upon the market and not the necessarily the market itself that dooms women to secondary status (Beasley 1994). From the feminist standpoint, the lesser value society places upon women’s labor correlates with secondary status as

opposed to relative productivity or merit (Jacobsen 1994; Sturnick in Koerner 1999). Within this patriarchal framework, perceptions about innate ability are given a context of meaning: gender differences will be filtered through cultural biases, and women's supposed innate attributes will be devalued.

Side-stepping the issue of systemic gender bias, neoclassical economic theory casts the devaluation as inevitable: it shifts the focus away from cultural factors to a narrow focus upon the rational interactions of biologically different agents in the market. From a "bioeconomic" standpoint, the lesser value placed on women's labor is not due to patriarchal controlling mechanisms, and it is not subjective; it is biologically grounded. Furthermore, it follows that economists who merely relate the biological reality of gender difference in their models are not making value judgements *per se*, but are objectively predicting how the market will value these differences.

In addition to being portrayed as value-free, biological determinism combined with free-market theory provides the "why" for a behavior that is not economically advantageous. When emphasizing the traditional role of women, these models can be utilized to highlight the incompatibility between the roles of primary caregiver and committed employee. Rather than focusing upon the devaluation of women's labor, this ideological framework is relativistic in that it presents the inferior benefits for women as being compensated for by other means. Seemingly irrational economic behavior must be adaptive for needs that exist outside of the market: less time invested in the labor market supplies more time for the family. Thus, the condition of wage asymmetry is defended as reflecting a balance, which is not far removed from the free-market premise that the market seeks equilibrium.

However, it should be emphasized that this narrow market model can still predict inevitable gender inequality *without* relying upon the premise of biological differences. As long as the cultural factors of gender stereotypes, cultural expectations, and internalization are omitted from the model, a rational agent can be constructed who has free will to make economic decisions (Kessler-Harris in Tell 1986; Redmount 1995;). In other words, it does not matter why women segregate themselves into lower-paying occupations, or why women leave the labor market to take care of the family, only that they do (Donohue 1997). From this perspective, employers, being rational agents themselves, are merely reacting to women's choices made of their own free will.

By avoiding issues of power in economic analyses of gender, neoclassical economists are omitting a crucial component of individual choices (Beasley 1994; Levin 1995; Redmount 1995). Furthermore, creating the illusion of freedom in a coercive society is a useful ideological tool in itself, in that it facilitates the perpetuation of existing power structures. In her essay, "Controlling Processes:

Tracing the Dynamic Components of Power,” Laura Nader (1997) explains how the notion of “free choice” can be used to benefit those in power:

The idea of rational economic actors’ maximizing their utility by free choice among alternatives forms the core of a premise that all private choices are free of coercion. In the Chicago School version of law and economics, only the state is coercive, not the market—a belief that contributes to the maintenance of hegemonic power not only in the general population but also among anthropologists. [1997:734]

By ignoring the limitations placed upon women in a patriarchal society, the ideology behind the neoclassical economic model becomes a patriarchal ideology. Economic agents are claimed to make free and rational choices, presumably acting based upon biological needs. From within this framework, efforts to achieve socioeconomic gender equality are routinely discouraged: social policy cannot change biological reality, and restrictive measures inherently disrupt freedom.

Equality vs. Efficiency

In standard neoclassical economic theory, seeking gender equality does not necessarily serve the goal of justice. The economic notion of justice is simultaneously conflated with and held to the standards of freedom and efficiency: for a policy to be just, it must be efficient and not interfere with individual freedom (Dolan & Goodman 1995; Friedman 1990; Posner 1992). Efficiency is typically associated with an individual’s freedom to pursue self-interest, in the sense that it is more efficient to let people do what they want to do. Equality, on the other hand, is acknowledged as a valuable ideal, but attempts to regulate the market in order to enforce equality are seen as threats to freedom and to market efficiency (Dolan & Goodman 1995). Therefore, equality is desirable only as long it can be accomplished without infringing upon freedom and efficiency, which are cast as the highest standards of justice.

The economists’ notion of justice as a compromise between equality and efficiency is complicated by the distinction made between “equal opportunity” versus “equality of outcome” (Friedman 1990). Removing obstacles such as discrimination theoretically furthers equal opportunity, thereby promoting the ideals of both freedom and efficiency. However, egalitarian models are framed as inherently impractical in a competitive world of self-interest and natural inequality. Furthermore, in the hypothetical meritocracy of the neoclassical economist, unequal outcomes imply unequal abilities—which completes the circular reasoning, as unequal abilities are a key premise of the model.

Traditional economists, such as Milton Friedman (1990) from the University of Chicago, stress the conflicts that are inherent in pursuing both the ideals of equality and efficiency, they argue that laws designed to promote equality will be destructive if

they contradict the self-interest of those in the market. This slippery slope of lawless anarchy is contrasted with the well-ordered equilibrium of the free market in which unequal resources are allocated justly to unequal economic agents. Friedman argues that seeking to redistribute resources with equality in mind is dangerous to a free society:

a society that puts equality—in the sense of equality of outcome—ahead of freedom will end up with neither equality nor freedom. The use of force to achieve equality will destroy freedom, and the force, introduced for good purposes, will end up in the hands of people who use it to promote their own their own interests. [Friedman 1990: 148]

But feminist critics argue that by inverting this order and holding the market to the standards of a democratic society, gender inequality can be revealed as inefficient—as both a social failure and a market failure, requiring government intervention (Donohue 1997; McCaffery 1993; Pujol 1995). This inversion of standards would necessarily change the equation and reframe the “outcome” of gender inequality as evidence that freedom is already hindered.

Feminists also warn that eschewing social intervention under the guise that the market has found a natural equilibrium misrepresents market equilibriums as being impervious to intervention. As economist Joyce Jacobsen (1994) cautions, “existence of an equilibrium does not imply that an alternative and preferable equilibrium could not be achieved for the economy” (Jacobsen 1994:336).

Holding the Mirror up to Economists

An important focus for feminist analysis is upon the economists themselves: as a profession and as a discipline, economics is very gendered. Jacobsen notes that the male dominated composition of the field, as well as the division of labor within the field, give men a prominent place in the framing of economic theory:

case studies of particular occupations often show a great deal of intraoccupational segregation, and it appears that men tend to be concentrated in the higher-paying subspecialties in both highly male and highly female occupations. For instance, among economists—a predominantly male occupation—there are large sex differences in research specialties, with most of the women working in the more applied fields such as labor economics, and almost no women working on the theoretical side of the discipline. [Jacobsen 1994: 232]

The economic profession, therefore, is not immune to the broader trends of the market. It is a scientific field with more men than women, in which men are paid relatively more, and in which men are key figures in the process of knowledge

production. It is also interesting to note that men are primarily engaged in theorizing, making *abstractions*. How does this tendency relate to criticisms that economic analyses of gender problems are too detached and decontextualized?

Considering the manner in which neoclassical economists have traditionally framed the woman's role as incompatible with the needs of the market, feminist economists question their objectivity (Levin 1995; Pujol 1995; Strassmann & Polanyi 1995). Rather than being completely objective theorists, economists are like any other economic agents — acting out of their own self-interests. While these interests might be categorized as patriarchal, they might also be construed as protecting and perpetuating the neoclassical paradigm. (Strassmann & Polanyi 1995:132)

Linguists Livia Polanyi and Diana Strassmann from the International Association for Feminist Economics argue that economists engage in “storytelling” to construct a compelling narrative so as to secure the dominance of their paradigm in the marketplace of ideas (Strassmann & Polanyi 1995). Based upon their linguistic analysis of economic texts, they argue that this dominance is achieved through various rhetorical methods: by claiming objectivity, using a scientific presentation with sophisticated graphs, using repetition of statements, and tailoring the economic narrative to be consistent with the assumptions held by the audience of economists. Their study of economic texts reveals the advancement of particular ideas to the detriment of others, controlling the discourse of the discipline through linguistic devices which are:

mechanisms of social control that for far too long have kept the gates closed to potential economists who might tell other stories, stories perhaps more resonant with the experiences of groups currently underrepresented in the ranks of the profession. [Strassmann & Polanyi 1995:144]

The result is the marginalization of other narratives, namely that of feminist economists.

A Comparison of the Two Paradigms—Structural Similarities

Malinowski recognized that controls operate most effectively through symbols that society places beyond the jurisdiction of its formal and social control system. Mintz illustrated how ideas linked to the disparities of power grow and are nurtured through interlocking institutions. Cultural control is often the result of incremental, not abrupt, change, and when it is achieved incrementally it is powerful indeed because it slides in rather unnoticed and comes to be considered natural. [Nader 1997:722]

In current discussions about gender, both the reductionist/determinist biological model and the neoclassical economic model have functioned as instrumental components of a modernized and patriarchal ideology. This ideology is hegemonic due to its effectiveness in discouraging attempts to disrupt the current power asymmetry of gender relations. Because gender inequality is represented as an inevitable reality of the human condition, change appears to be unattainable. Economic arguments to this effect point to sociobiological theories for support, whereas biological arguments about gender incorporate competitive models to explain natural stratification. As a result, the apparent harmony between the “hard” biological sciences and the “dismal” social sciences seems to further legitimate these claims of natural inequality.

But what is interesting about biological and economic paradigms is *precisely* how little they differ. The similarities between the models reveal a shared underlying patriarchal structure. They both provide an analytical framework in which “objective” analysis leads to the scientific legitimization of traditional gender roles and structural gender inequality. In fact, when looking closely at key assumptions, structural elements such as analytical variables, and methodological problems within each of the paradigms, it appears that the two models are really one. Accordingly, feminist criticisms of standard economic theory are echoed by feminist biologists. The two paradigms are parallel models sharing fundamental similarities: the male standard for comparison, the claim of scientific objectivity, the framing of inequality as inevitable, the emphasis of biological determinants over cultural factors, the self-perpetuating nature of selective knowledge production, and finally, a pervasive influence within the larger culture.

A Male Standard

As methodological disciplines, both models were developed in male-dominated environments, and both use a male standard to conceptualize the human organism and the social organism (Fausto-Sterling 1985; Jacobsen 1994; Pujol 1995; Van Den Wijngaard 1997). In the theoretical/conceptual foundations established at turn of the century, the perception that women are inferior was explicit; now their inferiority is implicit in scientific/economic representations of gender differences. This gender bias can be seen in the narratives of economic and biological discourse, in which the human body and the rational economic agent are implicitly male. Women are the other, the marked category (Fausto-Sterling 1985; Feiner 1995; Jacobsen 1994; Martin 1998; Nelkin & Lindee 1995; Strassmann & Polanyi 1995; Van Den Wijngaard 1997).

Objectivity and Inevitability

As mechanical frameworks, both models share a Cartesian epistemology supported by the assumption of objectivity, yet feminist critics argue that there is neither a “free” economic market nor a “free marketplace of ideas” in which objective

knowledge exists. The paradigms are criticized as simplistic explanations of complex processes, both on the level of the organism and on the societal level. A shared premise (and conclusion) in both sociobiology and economics is the naturally competitive state of human interaction, which in both models leads to natural stratification and inequality (Friedman 1990; Beasley 1994; Donohue 1997; Duster 1996; Fausto-Sterling 1985; Jacobsen 1994; and Nelkin & Lindee 1995). These outcomes are framed as inevitable and apolitical, the result of genetic fate and the “invisible hand.”

Determinism Over Cultural Variables

Furthermore, both models seek explanations for gender inequality *other* than discrimination, while at the same time providing a *rationale* for discrimination. Biological predispositions, instead of cultural pressures, are given as the reason for group differences in behavior, and discrimination is framed as differential treatment in response to these differences. The causal relationship is presented as unidirectional: biology determines behavior. However, feminist economists and feminist biologists counter that empirical evidence refutes these assumptions, arguing rather that the biological/economic model is imposed upon reality. For example, economist Michele Pujol (1995) challenges the conflation of presumed biological and economic roles:

The strange paradox is that women do not seem to want to do what is claimed to be “natural” for them, they have to be coerced on to that path. In the name of their “natural duties,” women were kept away from making their own decisions. Severe legislation to keep them in the home was proposed as the panacea for the “evil” of infant mortality. ... Meanwhile, as working-class women were to be coerced into the dependent reproductive role, their economic contribution to their family and to society as a whole was to be further denied and made invisible: their work, although seemingly essential, would receive no economic return or recognition. [Pujol 1995: 24]

As it did a hundred years ago, contemporary theory ignores the integrative manner in which culture shapes biology (Hubbard 1990) and how traditional *perceptions* of gender carry a weight of their own as behavioral determinants (Goodenough 1990; Shih 1999). Yet guided by today’s models, planned social change appears futile because market forces should not be tampered with, and innate gender differences cannot be altered.

In both models, legal intervention to address gender discrimination is futile: the law cannot combat market forces anymore than it can combat human nature. In a telling passage from *Sex and Reason* (1992), Richard Posner builds upon the sociobiological model and distinguishes the parallel economic model from

constructionist approaches. Applying his bioeconomic calculus, Posner frames existing social structures as practically immutable:

The economic approach differs from the familiar constructionist approaches in assigning less weight to power, exploitation, malice, ignorance, accident, and ideology as causes of human behavior and more to incentives, opportunities, constraints, and social function. (This is partly a methodological consequence; *concepts such as power, exploitation, and ideology are not concepts in economics.*) The difference is not trivial. To show that a practice serves a social function does not make it good in an ethical sense but does suggest that it may be difficult to change. Left-leaning constructionists...are not comfortable with the idea that institutions, customs, laws, and other features of the social world might be rational, and specifically might be durable adaptations to deep, though not necessarily innate or genetic, human capacities, drives, needs, and interests...They dislike the functional outlook that economics shares not only with evolutionary biology but also with influential schools of political science, sociology, and anthropology, because that outlook is implicitly *antiutopian*. [Posner 1992:30; emphasis added]

Posner's bioeconomic model does not acknowledge key cultural factors affecting human interaction, much less the power of controlling processes. Not surprisingly, his position on antidiscrimination laws is that their net effect results in more harm than good (Donohue 1997).

Self-Perpetuating Paradigms

One similarity between the two paradigms is common to any conceptual framework that has been dominant in framing scientific inquiry—the models and questions shape knowledge production to be consistent with the paradigm (Richards' analysis of Kuhn in Richards 1987; Feyerabend 1978; Keller 1983). Paul Feyerabend argues in his analysis of science operating in a free society that:

Unanimity is often the result of a *political* decision: dissenters are suppressed, or remain silent to preserve the reputation of science as a source of trustworthy and almost infallible knowledge. On other occasions unanimity is the result of shared prejudices: positions are taken without detailed examination of the matter under review and are infused with the same authority that proceeds from detailed research. [Feyerabend 1978: 88].

In contemporary economic theory, the neoclassical paradigm is dominant, and its perpetuation is facilitated in the production of its own literature as well as by its

infusion into law and public policy (Beasley 1994; Jacobsen 1994; Pujol 1995; Strassmann & Polanyi 1995; Kairys 1998; Kennedy 1998; Mensch 1998;). In biological theory, a reductionist, male-biased paradigm is dominant, and its perpetuation is facilitated by selective publication in scientific journals as well as by an institutional preference for research designs based upon a binary construction of gender (Fausto-Sterling 1985; Nelkin & Lindee 1995; Van Den Wijngaard 1997).

In both disciplines men are overrepresented, having direct control over the cycle of knowledge production (Jacobsen 1994; Van Den Wijngaard 1997). As biologist Marianne Van Den Wijngaard cautions, women in the biological sciences have a difficult time conducting research that does not fit within the existing paradigm:

In general it is almost impossible for a woman scientist to produce unconventional results, especially if they cross boundaries constructed by thousands of publications of male colleagues. Many female scientists have ambiguous feelings about criticism from a feminist perspective, perhaps even more so than male scientists. It is common that criticism from a feminist perspective is welcomed with skepticism or even with anger...Therefore, women scientists formulating criticism mostly choose to do this from a scientific viewpoint rather than from a feminist standpoint. Reliance on the latter would be detrimental to their arguments and cogency. Criticism from a feminist perspective is easily dismissed by labeling it "not objective and thus not scientific." ...Moreover, for women scientists, the quality of their work is more important than the fact that they are female. Therefore, a distinction between feminist scientists and women scientists is hard to make. [Van Den Wijngaard 1997: 75]

This sentiment is echoed by biologist Anne Fausto-Sterling (1985), who openly declares her feminist standpoint and argues that it is no more subjective than the existing paradigm.

Similarly, feminist economists argue that women are marginalized by the economic model (Beasley 1994) and that feminist economists are marginalized within the discipline (Strassmann & Polanyi 1995). In both disciplines, the notion of a "free marketplace of ideas" is challenged by feminist critics who claim that theoretical constructs are upheld not by their validity, but by the suppression of alternative models. In this manner, scientists and economists are controlled from within their disciplines in addition to being agents who reproduce a controlling ideology.

Cultural Impact Across Institutions

The infusion of biological and neoclassical theory into legal reasoning has had a direct impact upon American society in the form of legal precedent. But their influence does not end there: genetic and economic determinism are prominent ideologies shaping both public policy and public perceptions in the 1990's (Beckwith 1996; Duster 1998; Kay 1990; Nelkin & Lindee 1995; Pujol 1995; Trzcinski 1995; Van Den Wijngaard 1997). And with increasing frequency, biological and economic arguments are advanced in order to discourage attempts to affect social change (Duster 1996, Hubbard 1990; MacKinnon 1990; Nelkin & Lindee 1995; Rhode 1997; Trzcinski 1995).

For example, law professor Herma Hill Kay (1990) warns about the recent emergence of "legal sociobiology" as a school of thought in which theories of biological determinism are utilized to support legal arguments for differential treatment. She argues that sociobiology is invoked in order to "lend a scientific aura" to traditional gender roles, emphasizing biological differences in order to justify gender inequality:

I doubt whether the advocates of translating sociobiological learning into legal doctrine have adequately considered how that learning may be transformed by the law....The law is not a mirror that gives a true reflection of the learning it takes from other disciplines. Rather, in applying that learning to concrete cases, law inevitably shapes what it views as nonlegal material to suit legal ends. The not infrequent outcome is the creation of a specialized legal understanding of the scientific data that is unrecognizable or unacceptable to its source.
[Kay 1990: 79-80]

The danger is that legal sociobiologists will build upon feminist gains in securing legal protections for reproductive rights, and confine women to activities considered compatible with their "biological destiny" as mothers (Kay 1990: 82). Not surprisingly, legal sociobiologists have used the motherhood premise to argue for excluding women from military combat, and they have glorified gender differences in order to champion the merits of single-sex education.

In addition to obvious reproductive differences, scientific claims about gender differences in cognitive abilities and psychological propensities necessarily challenge the notion of equal treatment under the law. Although stereotypes about appropriate gender roles are becoming more difficult to defend legally, claims of innate gender differences and developmental needs (gleaned from biological and psychological studies as well as from theories in evolutionary biology and sociobiology) are still woven into legal discussions about pay inequity, occupational segregation, sexual harassment, child custody, pregnancy leave, and single-sex education (Franke 1995;

Gordon 1998; Harrington 1995; *Harvard Law Review* 1997 & 1995; Kay 1990; MacKinnon 1990; Olsen 1998; Rhode 1997; Taub & Schneider 1998). At issue in these discussions is whether men and women are so differently situated that differential treatment and the use of gender-based categories are necessary.

Buttressing the recent legal sociobiology trend has been the much more institutionalized and influential “Law and Economics” movement, purported to inform legal reasoning with “logic, reason, and ‘science,’” (Kairys 1998: 11; Epstein 1993; Mensch 1998; Posner 1992; Weller 1997). This legal subdiscipline applies a neoclassical economic framework to legal analyses in order to determine the efficiency of legal intervention into the workings of the market. When the economic model is applied to antidiscrimination law, biological gender differences are typically an underlying assumption (Donohue 1997; Faludi 1991; Jacobsen 1994; McCaffery 1993; Pujol 1995). For example, Professor Richard Epstein at the University of Chicago Law School criticizes feminist analyses that do not accept biological gender differences in talents and temperament, preferring the “instructive inquiry” of Carol Rose who “attempts to build sex differences into her model” (Epstein 1993:84). Economic and biological models are frequently incorporated into legal arguments in defense of differential treatment. Biological based differences and preferences cause gender asymmetries in the market, and since the market is naturally efficient, gender asymmetries prove biological differences (such as different interests in types of sales positions: *EEOC v. Sears, Roebuck & Co.*, 628 F. Supp. 1264 (1986)).

While the current trend in the Supreme Court is to challenge the use of gender stereotypes to deny equal opportunity with a heightened scrutiny (*United States v. Virginia et al.*, 518 US 515 (1996)), physiological and psychological gender differences are still a factor in legal analyses of disparate treatment and disparate impact (Faludi 1991; Franke 1995; *Harvard Law Review* 1995 & 1997; Kay 1990; Kessler-Harris in Tell 1986; MacKinnon 1990, Olsen 1998; Rhode 1990 & 1997; Taub & Schneider 1998). Furthermore, one consequence of the law and economics movement is that economic models are invoked to question the limitations of using antidiscrimination law to regulate behavior in a hypothetical “free marketplace” (Donohue 1997; Franke 1995; Jacobsen 1994; Kairys 1998; Kennedy 1998; McCaffery 1993, Mensch 1998; Nelson 1995; Posner 1992 1992, Pujol 1995; Tell 1986; Trzcinski 1995).

In order to judge the legal validity of sex-based (or “gender-based”) categories, courts often have to evaluate expert testimony about biological, psychological, and developmental differences (Buchan 1997; Huber 1991; Mack 1994; Marshall 1993; Mervis 1993; *Nature* 1993). In particular, courts must determine whether the expert testimony proves that differential treatment is absolutely necessary for achieving a stated objective. But because biological arguments have historically been used to deny equal protection, the trend in today’s courts has been to apply a stricter level of scrutiny towards the way in which scientific claims are used to

construct gender roles (Justice Scalia's dissent claiming expert testimony proved deep-seated developmental differences in *United States v. Virginia et al.*, 518 US 515 [1996]). As feminist lawyer Catharine MacKinnon (1990) observes, "the issue is the *social meaning* of biology, not any factual or object quality of biology" (MacKinnon 1990:225, emphasis added; Ingold 1968; Franke 1995). Acknowledging this tendency for scientific data to be contorted to justify gender stereotypes, the courts take a "hard look" at claims about innate tendencies (Justice Ruth Bader Ginsburg's majority opinion in *United States v. Virginia*, 518 US 515 [1996]).

In *United States v. Virginia*, 518 US 515 (1996), the Virginia Military Institute's (VMI) defense for their male-only program included expert testimony about gender differences in development as well as studies comparing men and women's responses to single-sex education versus co-education. The VMI was using scientific studies to rationalize its traditional methodology, equating what their experts designated as "developmental needs" with innate psychological needs, and resting ultimately upon the assumption of immutable biological gender differences:

Virginia maintains that these methodological differences are "justified pedagogically," based on "important differences between men and women in learning and developmental needs," "psychological and sociological differences" Virginia describes as "real" and "not stereotypes. [Justice Ginsburg's majority opinion]

Interestingly, one expert which the VMI cited, Carol Gilligan, claimed that the schools were misusing her data by characterizing developmental differences as having innate causes: she argued that the differences are caused by divergent experiences.

Not surprisingly, Richard Posner lambastes the Court's decision as an example of what he calls "ambitious theorizing about the Constitution" (1992:82). Siding with the VMI's differential treatment of women, he claims, "It is sheer illogic to argue that if, in the past, biological differences between the sexes, so far as those differences bear on aptitudes for various jobs, were exaggerated, those differences must be zero." Posner argues that reliance upon facts, not Constitutional theory, provides a more pragmatic legal analysis, and he asserts that the Court's decision was "founded upon a naive conception of democracy." Certainly, arguments such as these provide powerful ideological support to the notion that gender equality is unattainable—they hold *efficiency* to be the ultimate standard, gender stereotypes to be the facts, and characterize *justice* as a theoretical construct which runs counter to an unequal reality.

In a direct manner, legal reasoning has been shaped through explicit articulations of gender difference in expert testimony. In a comparatively indirect manner, public perceptions are being influenced through the conflation of biological

and economic models—which have permeated the popular media in much-hyped cover stories about gender differences (Fausto-Sterling 1985; Nelkin & Lindee 1995; Van Den Wijngaard 1997). These gender stereotypes are gaining ideological power as they are being scientifically validated: this hastens the process of internalization, perpetuating the self-fulfilling prophecy of gendered behavior (Goodenough 1990).

Finally, the major impact of these deterministic models has been in their framing of gender roles: specifically in their legitimization of the notions that women are relatively less suited for a technological or competitive work environment. The acceptance of these notions—by the courts, by employers, by policy makers, by schools (Sadker 1994) and by men and women as individuals (Shih, et al. 1999) —exists as a fundamental ideological barrier to socioeconomic gender equality.

A Comparison of Parallel Features: The Same Model?

BIODETERMINISM	NEOCLASSICAL ECONOMICS
Shared Structural Features of the Paradigms	
The assumption of Scientific objectivity—the scientific method of analysis reveals objective truths; scientists’ claims are framed by the data	The assumption of Scientific objectivity—economic analyses are scientific, therefore, objective; economists make positive as opposed to normative claims
Scientific knowledge arises in a “free marketplace of ideas.”	Rational economic decisions are made in a “free” market
Genetic Reductionism—the gene is the point of reference in analysis in the human organism	Individualism—the individual is the point of reference in analysis of the market
Imposes a mechanistic model upon the human organism	The “market” is a mechanistic model
The male body is the archetype/standard of the human organism	The Rational Economic Man/Agent is the archetype /standard of the individual
The narrative in scientific/biological literature and textbooks is gendered	The narrative in economic literature and textbooks is gendered
Shared Claims and Assumptions	
Differential sexual strategies result in a gendered division of labor: Man the hunter vs. woman the gatherer and mother	Differential economic needs result in a gendered division of labor: man the full-time, tenured, technologically-trained employee vs. woman the part-time, uncommitted, humanities-trained mother
Men are naturally more aggressive	Men are naturally more competitive
Women are best suited for their natural role as mothers	Women have a comparative advantage to stay home and raise children
Group differences in behavior result from innate gender differences, not from the culture’s imposition of traditional gender roles	Needs cannot be artificially manufactured—different gender needs and subsequent behavior do <i>not</i> result from the culture’s imposition of traditional gender roles
The status quo is a product of Evolution—it	The status quo is a product of Market

results from the competition of selfish genes	Equilibrium—it results from the competition among individuals guided by self-interests
Natural Selection affects an individual's success—traits must be adaptive	Market Forces affect an individual's success—there must be a demand for abilities and skills
Scores on standardized intelligence/cognitive tests reflect innate ability	Wages reflect worker human capital, productivity, and value
Equality is not natural—competition leads to stratification	Equality is not realistic—competition leads to stratification
Gender discrimination is differential treatment based upon biological differences	Gender discrimination in the workplace can be efficient
Social policies cannot change genetically determined inequalities	Social policies should not interfere with the market or individual choice

Conclusion

Given the right to vote in 1920, women ostensibly entered the democratic playing field as full American citizens, yet judging by indicators such as wages and positions of power in both the private and public sectors, the advancement towards gender equality has been effectively stalled. Occupational segregation into blue-collar versus pink-collar jobs has remained relatively constant since the turn of the century, and the gradual movement of women to non-traditional jobs is only a very recent development in the labor market (Jacobsen 1994). Even the eventual integration into non-traditional jobs is doubtful, given the recent shift towards technology-based industry (Koerner 1999) and the reemergence of traditional gender roles as a “scientifically” proven reality.

While trends in the Supreme Court and in official public policy appear promising on the surface, the likelihood of achieving gender equality in America is questionable: even if significant biological differences do not exist, to what extent can society or the law combat internalized perceptions of biological inequality? Ideological control over the mind has a ripple effect: in the scientific community, the market, and the courtroom, so-called “rational agents” construct knowledge, segregate themselves by presumed innate ability, and look to biological facts to inform legal reasoning. Men *and* women help to perpetuate, even to act out, perceptions of innate gender difference, showing the pervasive power of patriarchal ideologies which have been validated by scientific institutions.

In the construction of social reality, traditional notions of gender have been the cause and effect in a cycle of scientific knowledge production. Traditional claims of male superiority have been legitimated, but the secondary status of women is no longer depicted as a divine plan—it is depicted as a natural outcome of biological predispositions competing in a rational marketplace. To proclaim “men are superior,” directly challenges the democratic ideal of equality, but to say that men are innately

better at math and science while women are better at linguistic skills avoids the problem of overt valuation. This indirect attack upon equality, however, is more insidious. In a society where economic success depends upon technical skills, and in which free-market ideology places men and women in competition for economic resources, women's economic inferiority is effectively declared inevitable.

As feminist critics have argued, the question as to whether men and women are innately different in personality and intellectual capability cannot be apolitical. By differentiating between traits that are believed to be so intimately linked to our potential, we will invariably value some traits over the others. And considering the historical development of the neoclassical economic and biological paradigms, it is no coincidence that those traits associated with men have once again been "objectively" determined to be more valuable.

The stakes are high. We are experiencing rapid and dramatic changes in our economy as well as in our ideology: technology and science are shaping our interactions and our knowledge of ourselves (Warren and Bourque 1989). With the market left to its own devices jobs become more technological, learning institutions more competitive, the standardized testing of human potential ever more quantified; the process of social stratification can only be accelerated. In the shuffle, those who are not equipped will be left at a social and economic disadvantage.

In light of this rapidly changing social context of technological retooling, in which the secondary status of women appears to be the constant, a number of questions remain to be answered. What are the counter-hegemonic elements of each of these scientific paradigms? In other words, can genetic research and empirical economic data undermine deterministic claims? Will the hybrid scientific/economic paradigm result in changes in the market to accommodate women's perceived biological needs, or will feminist gains be reversed in order to enforce the newly validated traditional gender roles? Finally, what are the alternative paradigms, and will feminist perspectives be able offer a substantial and viable counterpart to existing paradigms?

The Possibility of Alternative (Feminist) Paradigms

Within the details of hegemonic ideologies may also lie the roots of counter-hegemonic ideologies (Nader 1997). In evaluating the power of the existing biological and economic paradigms, therefore, it is useful to look at the possibility of undermining these paradigms or forcing a paradigm shift. In particular, the infusion of a feminist perspective into both disciplines could be instrumental in changing our culture's perception of gender roles. Just as "bioeconomic" ideology has influenced popular perceptions, legal constructions, and personal internalizations of gender, a feminist ideological counterpart may also filter through society if given institutional power.

In the biological model, biologists such as Ruth Hubbard and Anne Fausto-Sterling have already made an impact by revealing methodological shortcomings, but feminist biologists have also made changes by challenging the assumption of a binary construction of gender on the conceptual level. (Van Den Wijngaard 1997). In addition, by including the power of culture to influence biological development, feminists have contributed a “transformative” model that challenges determinism and that must eventually be reconciled within a broadened paradigm (Hubbard 1990; Van Den Wijngaard 1997). As women are currently entering the biological and life sciences fields in even greater numbers than men (Koerner 1999), perhaps new perspectives will arise to inform biological inquiry.

Similarly, in the neoclassical economic model, feminist economists have emphasized cultural factors such as the power dynamics within the household unit and the internalization of gender roles on the individual level (Beasley 1994; MacDonald 1995; Redmount 1995). As economist Chris Beasley notes, looking more closely at the household would change the entire paradigm:

The inclusion of that field might also alter the meaning of economics such that rather than the household economy always being seen as dependent on the market, the former may be viewed as a repressed dimension underlying the market economy and integral to its existence...the implications of a conception of market economics being dependent on the system of the household economy in modern societies must significantly affect all existing economic paradigms. [Beasley 1994:115]

By the same token, including the effect of cultural expectations upon gendered behavior will necessarily change the conception of the rational economic man as well as the notion of biologically determined choices.

In addition, the continued analysis of scientific cultures by feminist anthropologists may serve to expose the narrative nature of the dominant paradigms, revealing how current frameworks merely represent a selected fraction of many possible frameworks. Inquiry along the lines that Yanagisako and Collier (1990) have suggested—questioning the cultural assumptions underlying both the Western scientific construction of gender and the feminist deconstruction of gender—will potentially pave the way for an interdisciplinary feminist *reconstruction* of gender.

An illustrative example of this type of analysis would be Emily Martin’s (1991) deconstruction of the egg and sperm narrative. By first making visible the underlying assumptions about gender that are woven into scientific representations of the egg and sperm, Martin is then able to discuss alternative accounts of fertilization. In other words, without exposing the “tacit assumptions” which bound scientific

paradigms (Keller 1983), it is difficult to pinpoint the blind spots in particular avenues of inquiry (Fausto-Sterling 1985).

This is the reason that while Anne Fausto-Sterling concedes, good science in the long run prevails over bad,” she also cautions that good science would have continued to produce a male-centered narrative without the influence of a feminist critique (1985:212-213). This is because scientists:

had no alternate framework within which to develop new sight. Feminism provided that new vision, allowing many scientists—even those who do not consider themselves political feminists—to move in a new direction. ‘Good science’ in the absence of a political and cultural movement did not get very far. [Fausto-Sterling 1985:213]

To study the subculture of those who produce scientific knowledge necessarily involves looking at its interaction with the surrounding culture; therefore as Martin continues her focus upon the scientific community, she emphasizes the need for anthropologists to conceptualize the entanglement of the beliefs of scientists with those of non-scientists (Martin 1998). The fluid nature of scientific knowledge production, she argues, can be directly studied, and the anthropology of science can offer a radical critique:

This task would be greatly aided by the work of numerous science studies scholars who have examined important aspects of the ways science is embedded in society: how scientists interact with nonscientists ... how science can be seen as culture and contains many different “cultures”...[and] how scientific knowledge is as socially constituted as other forms of knowledge production. [Martin 1998:28]

The permeable, potentially non-existent boundaries between the scientific community and American culture means that there are multiple sites for anthropologists to focus their studies: anthropologists can look at the sub-cultures of biologists and economists, the narratives in their work, the interaction between the two disciplines, the impact of feminist critique upon the disciplines, the impact of “bioeconomic” theory upon the perceptions of American men and women, and conversely, the impact of these perceptions about gender upon scientific knowledge production.

Furthermore, by exploring the dynamics of power and control, anthropologists can offer insights into why American women, as *any* group under cultural control, might “participate in their own domination” (Nader 1997:712). And in contrast, following Gramsci, they can also examine how groups under domination may “resist it, sometimes disrupting domination or putting the system in reverse” (Ibid:712).

In the case of biological and economic paradigms, it would seem that a reversal would not only require changing the paradigms from within, but in addition, it would require the conscious promotion of the democratic ideal of equality over the ideals of efficiency and of scientific “truth.” The validity of science to inform public policy, from this standpoint, would ultimately be judged by its compatibility with the standard of equality—science would be held to the standards of the larger society within which it operates. Otherwise, a reliance upon “objective” knowledge production will only solidify the underlying cultural values in which it is produced, and the models of inquiry will continue to generate equations in which the inevitable solution is inequality.

Anthropological inquiry can potentially serve as a catalyst to an ideological reversal of this sort by questioning assumptions about the current bioeconomic construction of gender. Once assumptions of the objectivity and boundedness of science are challenged, it can be demonstrated that the relationship between science and culture is not unidirectional—where scientific facts inform cultural beliefs—but entangled—where knowledge production is a fluid interactive process (Martin 1998). This inquiry might provide the ideological foundation on which the notion of gender equality could be consciously injected into scientific models—not to the effect that scientific research is constrained to prove men and women to be identical, but that scientific questions are no longer framed to value the construction of “male” over the construction of “female.”

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