In A.E. Bell & R.J. Sternberg (Eds.) The Psychology of Gender (pp. 251 - 273). New York: Guilford, 1993.

CHAPTER 10

The Psychology of Gender: A Perspective on Perspectives

MAHZARIN R. BANAJI

> . . . restraint is *not* the same in a man as in a woman, nor justice or courage either, as Socrates thought; the one is the courage of a ruler, the other the courage of a servant, and likewise with the other virtues.
>
> —ARISTOTLE (circa 335 B.C./1992, p. 95)

> Gender is an imposed inequality of power first, a social status based on who is permitted to do what to whom, and only derivatively a difference.
>
> —CATHARINE A. MACKINNON (1990, p. 213)

In this chapter, I focus on the assumptions of theory and method that underlie the contributions to this volume. I address (1) the problematic and recurring question of gender difference, (2) the accomplishments of empirically based social and cognitive accounts of gender, (3) the nature of social constructionist, psychoanalytic, and sociobiological approaches to gender, and (4) cross-cultural approaches to understanding the emergence and construction of gender. The perspective adopted here is jointly informed by the century-long American tradition of viewing psychology as a science and by the relatively more recent tradition of American feminist thought. The intellectual forces of science and feminism share the goal of antiauthoritarianism in the search for an accurate representation of reality and the goal of egalitarianism as a vision of the future. Together, they form a formidable partnership. Separated, they result in pseudo science and an ineffectual feminism.

A MATTER OF DIFFERENCE

Psychology's short history is marked by a long-standing interest in group differences. As the history of that research indicates, investigations of

difference have never been just a matter of difference. The record of empirical psychology's first analyses of the origin and nature of difference showcases the tragedy of belief in the purity of the scientific method and the result of theories produced by a socially homogeneous tribe of investigators. While I will not review psychology's murky past on group difference research in general, I will remind readers that psychological differences concerning gender and race have been among the most examined differences (for historical reviews and critical analyses, see Bleier, 1988; Fausto-Sterling, 1985; Genova, 1989; Gould, 1981; Haraway, 1989; Lewin, 1984; Lewontin, Rose, & Kamin, 1984). Knowledge of this history is incumbent on any contemporary scientist conducting research on social groups.

Important contributions to the sociology of knowledge in general (Merton, 1973; Fiske & Shweder, 1986) and to the question of gender in science (Eagly & Carli, 1981; Keller, 1985; Unger, 1988; Harding, 1986) have informed us that the production of normal science from hypothesis construction to data interpretation and policy implication is value-laden. We are fortunately aware that reputable investigators proposed and obtained support for theories of difference that are now known to be inaccurate or false (e.g., theories about the relationship between brain size and intelligence or the x-linked chromosome carrying intelligence) (see Gould, 1981; Fausto-Sterling, 1985). Such events in the history of the science of group differences have led some social scientists to question, in a variety of ways, the integrity of the scientific method (see Hare-Mustin & Marecek, 1990a; Hubbard, 1988; Reinharz, 1985). Although I believe that rejection of the scientific method is misguided, it is for feminist psychologists to continually address issues concerning the sociology of knowledge as they confront future understandings of gender.

Locating Gender Difference

Social versus Biological Emphases

Whatever the central concern of individual chapters in this volume, each takes a position regarding the following question: What are the origins and/or consequences of the most fundamental dichotomy of life, that is, sex and gender. Controversies have ranged from questions about whether differences exist at all, and if they do, why they emerge and how they must be treated. A fascination with difference in psychology, as in other life sciences and social sciences as well, is embodied in debates about the distinction between the (essential) innate versus the (imposed) acquired nature of gender difference. It is the same quest that drives the search for

the meaning of difference through sociobiological evolution (e.g., Buss, 1989; Dickemann, 1979; for critiques, see Dupre, 1990; Hubbard, 1990; Kitcher, 1990) and in sociocultural evolution and social-situational demands (Ashmore & Del Boca, 1986; Bem, 1983; Eagly, 1987; Eagly, 1987; Epstein, 1988; Farganis, 1986; Freize, Parsons, Johnson, Ruble & Zellman, 1978; O'Leary, Unger, & Wallston, 1985; Ridgeway, 1992; Spence & Helmreich, 1978; Stewart & Lykes, 1985; Williams & Best, 1990).

Some investigations of gender begin with observations of tangible differences between men and women in the social positions they occupy within the family, in interpersonal interactions, and in professional and public life. Analyses of the causes of such differences have been traditionally problematic, because it is here that interpretations of the underlying cause of observed difference have direct material implications for the quality of life of members of these groups. The two distinct emphases have led to differences in the attributes of gender that are examined, differences in method, and differences in praxis. Those whose research leads them to biological–sociobiological explanations tend to stress the adaptiveness of difference in the successful survival of the species which is considered the reason for (among other outcomes) greater male aggression and greater emphasis on physical attractiveness in women. Others whose research leads them to interpret differences in social psychological and sociocultural terms view gender differences as a product of the treatment of males and females by culturally prescribed actions. In spite of the varied nature of social accounts of gender, social psychologists are united in the belief that if differences in treatment (opportunity and experience) are eliminated, psychological gender differences as they currently exist will also be eliminated (Bem, 1983, 1993). Linking existing psychological differences to nonpsychological, material differences between males and females (e.g., social, economic, legal, and political status) and documenting the rapid reduction or elimination of differences may well be viewed among psychology's most important contributions to advances in understanding the malleability of gender. The contributions to this volume do not assume deterministic positions one way or another, and Kenrick and Trost (Chapter 6, this volume) explicitly address the issue of the interdependence of the biological and social.

Locating Gender in the Target or Perceiver

Deaux (1984) noted three themes that characterized her discovery of evolving approaches over a decade of research on gender. The first phase, she noted, consisted of a focus on individual differences (i.e, How do men and women differ on various psychological dimensions?), whereas the

second phase shifted focus from the sex of the target to the gender identity of the target (i.e., What are the psychological correlates of masculinity and femininity?) Both approaches locate gender as a property of the subject and data about difference are obtained by measuring female and male or feminine and masculine individuals. The third approach marks a more prominent departure from the traditional difference approach. Here, gender is viewed as a social category, and it is knowledge about gender differences located in a perceivers' mind that are examined to understand the assumptions, beliefs, and expectations about female and male. In particular, such differences in the mental life of the perceiver are useful when they are shown to create tangible differences in the behavior of targets.

Not surprisingly, early research on gender, like research on race and other group differences, measured men and women to identify differences in performance. The focus was on which group had how much of some hypothetical construct as measured by available, if crude, instruments. In the context of beliefs about gender differences that were not subjected to empirical test, early research on gender began by documenting comparisons of male and female. The result of careful analyses of experimental data, this research still casts some doubt on existing lay beliefs, scientific theories of female inferiority in personality, intellectual abilities, or morality (Freud, 1925/1961, 1931/1961; Kohlberg, 1981; Lehrke, 1972). The landmark volume by Maccoby and Jacklin (1974) is a case in point. Their qualitative analysis of several studies on each of several psychological dimensions, ranging from cognitive and intellectual abilities to personality and social abilities, showed that barring a few differences, females and males were more similar to than different from each other in psychological functioning.

The task of demonstrating a lack of gender difference, however, is not easy, especially for those with an allegiance to the experimental method. Individual studies showing no difference between males and females are suspect because they uphold the null hypothesis. Meta-analyses have therefore been conducted with greater frequency to make the point of difference or lack of difference more emphatically (e.g., Eagly & Carli, 1981; Hall, 1984; Hyde, 1984; Swim, Borgida, Maruyama, & Myers, 1989). Reports such as Feingold's (1988) longitudinal analysis of female and male scores on the Differential Aptitude Test from the 1940s to the 1980s, showing a substantial decrease in gender differences over time, makes an impressive argument in favor of diminishing differences as a function of changes in social circumstances. The research documenting a lack of differences holds a historically important position in psychology. In the 1970s it represented a brand of psychological research that was responsible, among other contributions, for raising questions about widespread assumptions of difference in the absence of empirical evidence. The tradition of noting a lack of gender differences continues even today, especially when intuition suggests the existence of difference (as seen in research on implicit stereotypes (Banaji & Greenwald, in press; Banaji, Hardin, & Rothman, in press) on emotional expression (Brody, 1985; LaFrance & Banaji, 1992), and on some cognitive abilities that previously showed larger gender differences (Feingold, 1988).

Observations of a lack of difference represent only one part of an at least two-part story about gender-difference research. If women and men live lives that are palpably different in the knowledge they have, the work they do, the positions they occupy, and the rights they have, it should not be surprising that such differences are mirrored in psychological differences, which in turn allow the maintenance of gender differences in related spheres. Following this reasoning, research on gender has also documented an array of differences: in nonverbal behavior (Hall, 1984), in the verbal expression of emotion (Brody, 1985; LaFrance & Banaji, 1992), in attributional styles (Deaux, 1984), in influenceability (Eagly & Wood, 1982), and in aggression (Hyde, 1984). But as Hyde (1981) and Deaux (1984) have commented, many of these differences are quite small, accounting for 1 to 5% of the variance. Such figures are not much help to those who would recommend social policy changes based on gender differences observed in the laboratory.

Most scientists who document gender differences are often explicit in identifying the mechanisms that cause such differences. Among the more persuasive studies are those by Eagly and Wood (1982) in which a perceived gender difference was first demonstrated and subsequently removed by equating status. Thus, what appeared to be a difference in the perception of male and female behavior was shown to be related to some other nonpsychological difference (e.g., status/power) (see also Wood & Karten, 1986). In opposition to such research showing the malleability of gender differences, others see males and females as "fundamentally" different, and in its recent feminist incarnation this position has been referred to as a "celebration of difference" (Rhode, 1990). The aim of this latter approach is to emphasize and magnify differences in order to expose the psychological ramifications of early interactional differences such as those assumed to be inherent in the sex composition of parent–child interaction. Epitomized in the well-known argument by Gilligan (1982), the position of differences in moral development and adult morality appear to be more debated and accepted in disciplines other than psychology. The practice in much psychological research is to ignore the question of whether or not observed differences are to be valued. In this sense, research in social, cognitive, and developmental psychology has been untouched by the general intellectual debate on difference (see Rhode, 1990). In

accordance, the writers of the chapters in this volume do not evaluate the nature of differences or ask evaluative questions about which end of the spectrum (female or male) must be sacrificed in favor of the other.

Research compatible with Deaux's (1984) identification of a third approach demonstrated how the grouping of humans into two classes, male and female, can produce striking differences in the manner in which they are judged and treated. For these scientists, the hypothesis that social conditions can and do create differences between social groups led to experimental demonstrations of gender difference in treatment when gender ought to have been irrelevant to the dimension of judgment. Several ingenious experiments comprise this category of evidence (see, e.g., Deaux & Emswiller, 1974; Goldberg, 1968; Hansen & O'Leary, 1985; Lott, 1987; Porter, Geis, Cooper & Newman, 1985; Skrypnek & Snyder, 1982; Snyder, Tanke, & Berscheid, 1977; Wallston & O'Leary, 1981). In many of these experiments, the protocol involved presenting information that was identical in every way except a critical association to a female–male attribute or feminine–masculine characteristic. Differences in the thoughts, judgments, and behavior of observers that resulted from differences in knowledge about gender serve as sharp reminders of the power of gender in evoking differential cognitive responses and overt behavior in perceivers and targets. Do such differences in behavior occur consciously? Although most studies have not obtained explanations from subjects for their gender-biased judgments, it is possible that their explanations may not reflect the influence of gender or judgment (for a general discussion of subject's inability to identify the causes of influence on judgment, see Nisbett & Wilson, 1977). Current research on the operation of implicit gender stereotyping seeks to identify the ways in which judgments may unconsciously be influenced by the presence of social category information (see Banaji & Greenwald, 1993; Geis, Chapter 2, this volume).

Deaux's (1984) scheme is useful even a decade later, for the literature reviewed in this volume may also be characterized as continuing in the individual-difference tradition of gender (Best & Williams, Chapter 9, this volume; Cross & Markus, Chapter 3, this volume; Fast, Chapter 7, this volume; Kenrick & Trost, Chapter 6, this volume; Lott & Maluso, Chapter 4, this volume), with less emphasis on the second approach of measuring gender identity (Best & Williams, Chapter 9, this volume; Cross & Markus, Chapter 3, this volume), and greater emphasis on research in the third tradition of viewing gender as a social category (Cross & Markus, Chapter 3, this volume; Geis, Chapter 2, this volume).

As we analyze the findings and theoretical positions presented in the chapters in this volume, we must keep in mind that the psychology of gender remains a psychology of gender difference. To relabel Deaux's categories, psychological research on gender continues to be on individual

difference, gender-identity difference, or treatment difference (on the part of perceivers). While many have debated whether the focus on difference is useful (see Rhode, 1990), until gender inequalities exist, that is, until psychological and material lives reflect unwelcome covariation due to gender, a psychology of gender difference will continue to be the focus of research and debate.

Social Beliefs, Social Learning, and Social Cognition in Constructions of Gender

Self-Fulfilling Prophecies

I believe that three chapters in this book are among the most valuable contributions of psychology to contemporary analyses of gender. In her own elegant and powerful research on gender, Geis has documented for us some of the more memorable examples of the interrelationship of gender and status/power (Brown & Geis, 1984; Geis, Boston, & Hoffman, 1985; Porter & Geis, 1981; Porter, Geis, Cooper, & Newman, 1985). In her chapter (Chapter 2, this volume), Geis accomplishes the most scholarly and incisive review to date on the self-fulfilling nature of gender prophecies. In the tradition of classic social psychology, the research represents a strong case for how an initially false belief causes the very behavior that, in turn, justifies the "truth" of the initial false belief. Among the many valuable lessons to be learned from this research (lessons that sorely require greater popularizing), are that (1) unconsciously held beliefs can and do influence behavior; (2) such beliefs influence mental functions of perception, inference, and memory; and (3) such beliefs also influence the behavior that produces the ultimate confirmation of the original belief.

Other psychologists have investigated the nature of the processes underlying self-fulfilling prophecies (Hirt, 1990; Miller & Turnbull, 1986; Snyder & Swann, 1978), and Geis extends such analyses by focusing on the variables that are crucial to gender: differences in role, status, power, authority models, and sexuality. For example, Geis points out how self-fulfilling prophecies can lead to the choice of men for high-status positions and women for subordinate positions. But rather than the simpler (and often true) explanation that such a choice may be made in favor of a better trained (male) individual, Geis leads to the more interesting (if cynical) conclusion that we spontaneously and unconsciously create differences in the behavior of others that confirm our gender stereotypes. The experiments she reviews are critical because the methods of most of the experiments show how discriminatory acts occur when little individuating information is available to differentiate among targets. That these acts are

performed without the awareness of perceivers and targets raise important questions about new strategies for change that must be developed (see Banaji & Greenwald, 1993).

Geis's chapter (Chapter 2) shows off social psychology in its most classic form by demonstrations of the power of the immediate social situation in the production of behaviors that are not freely chosen, while maintaining the illusion of choice. Evidence about human perceivers as efficient but nevertheless flawed information processors is brought home effectively. The origin of false beliefs is clearly positioned in the social conditions of gender rather than inside the (gendered) individual target of the prophecy, and in this regard Geis's analysis is similar to the social learning account of Lott and Maluso (Chapter 4, this volume). To show the "false creation" component of belief confirmation, Geis produces evidence to show how counterstereotypical models even through brief exposure can halt the cycle of self-fulfilling prophecies (Geis, Brown, Jennings, & Porter, 1984). Earlier, I mentioned research by Eagly and Wood (Eagly & Wood, 1982; Wood & Karten, 1986) to show the malleability of some gender effects. Geis's research has a similar optimistic character: It suggests that changes in social structure will produce changes in cognitive structure (see also Banaji & Greenwald, 1993).

Social Cognition

Cross and Markus (Chapter 3, this volume) capitalize on the learning that has occurred at the intersection of social and cognitive psychology and effectively apply it to review the social cognition research on gender. They focus on how the content and process of thought are influenced by the presence of gender. Their chapter is similar to the one by Geis insofar as both are committed to the view that gender is a creation of social forces and that analyses of thoughts and beliefs are valuable in examinations of gender. There are specific junctions at which analyses of cognition have proved worthwhile, and Cross and Markus review literatures covering memory for stereotype-consistent or -inconsistent information, stereotype-based judgments, the activation of stereotypes, the influence of stereotypes on behavior, and conditions that produce changes in stereotypes ("schemas," to use their term). A focus on memory and biases in information processing allows an understanding of how knowledge about gender is kept alive and is resistant to change. This quite extensive review by Cross and Markus represents the unique advantages of social cognition approaches in social psychology: (1) specifying and testing the cognitive mechanisms by which gender emerges and is sustained and (2) identifying the interrelationship between gender and cognition, in particular, the obvious but ignored link between the reality of the social category one

inherits (e.g., gender) and the acquisition of knowledge permitted by it and judgments that are produced in response to it.

In a previous review of research on self, Markus and Cross (1990) developed an argument for viewing gender (among other social categories) as an important conduit in the emergence of self, by pointing out the interpersonal nature of the development of self. Their present analysis is enhanced by a special focus on the role of self in the articulation of gender, this time attending to the intraindividual mental processes involved in the development of a gendered self. Because recent research on self has viewed it as a dimension of personality, reminding readers of the social basis of self is itself a contribution. Markus's own work is relevant here (Markus & Kitayama, 1991; Markus & Oyserman, 1988), as is research by McGuire and McGuire (1988) documenting the importance of gender in spontaneous self-description: For both boys and girls, the likelihood of mentioning their gender in a self-description was inversely related to the number of same-sex members of the family. Boys from largely female households and girls from largely male households were more likely to mention gender in their self-descriptions than those in more evenly gendered families. Such differences in the content of spontaneous self-descriptions show how dramatically social structure impinges on cognitive structure.

Social Learning

While both Geis and Cross and Markus focus largely (although not exclusively) on the behavior of perceivers of gender, Lott and Maluso (Chapter 4, this volume) view gender as a subject variable. In particular, they explicate the ways in which gender emerges through the process of learning. Their version of social learning has an obvious connection to an earlier learning theory (Miller & Dollard, 1941), although both the focus on gender and the clear advantage of including cognitive entities (such as beliefs and attitudes) produce a strong and quite appealing statement of gender as the behavioral outcome of learning.

Take the particular example discussed by Lott and Maluso to make the point that "consequences are often intertwined with opportunities for practice that typically precede, and provide the setting for, behavioral outcomes" (p. 102). For example, a doll is a toy that provokes the expression of emotion and caring (hugging, stroking), while a ball demands action (throwing, kicking). In a particular work that they cite (Stern & Karraker, 1989), adults acted equally warmly and responsively to infants labeled boys or girls, but these adults did differ in the type of (stereotyped) toy they offered the infant. An interesting sequence of events and attributions may follow: The adult might be correctly aware that no difference in warmth was shown toward male or female chil-

dren. In fact, conscious effort may be made to show equivalent emotion toward both female and male infants. However, an implicit handing of a sex-stereotypical toy may well create the stereotypical behavior that, in turn, could provide confirmation that a female child demonstrated more emotion and caring in spite of neutral treatment. Banaji, LaFrance, and Beall (1992) offer a similar analysis of how emotionality in adult males and females may develop, based on the finding that females generate more symbolic (emotional) possessions of value than instrumental ones, while males generate many fewer symbolic possessions than females do and a slightly greater number of instrumental possessions than symbolic ones. Although males and females show equivalent emotion toward valued symbolic and instrumental possessions, the greater number of emotion-eliciting stimuli (symbolic possessions) in the case of females is thought to provide, in Lott and Maluso's sense, greater opportunities for the expression of emotion.

A social learning approach brings a perspective to analyses of gender that is both unique and at the same time has infiltrated so much of current thinking about human behavior that (as with aspects of behaviorism, cf. Hintzman, 1990) its influence is hard to detect and sometimes easy to dismiss. Most notably, a social learning account of gender has created a science of the environmental contingencies that produce gender differences, located the origins of gender outside the physical and psychological entities that embody it, demystified gender by identifying it as one of several stimuli to which learned responses are evoked, and linked material conditions of existence to the environment in which the psychological development of gender occurs. Many marxist and feminist theorists, perhaps because of disciplinary blinders that disallow attention to experimental treatments, have unfortunately missed this powerful psychological account of the nature and emergence of gender.

The three chapters that review the research on the social conditions that create and sustain gender provide among the sturdiest data about gender differences that are available across the disciplines engaged in examinations of gender. In comparison with alternative analyses within psychology and outside it, these approaches (without reference to faith, reason, or personal conviction) unveil gender as an indisputable fact of life, consider the social and cognitive forces that create and sustain its evolution, and identify obvious paths by which the future can be dramatically altered if gender egalitarianism is an a priori value. In so doing, such research mirrors the commitment of older sciences to the vision of a better world (Conant, 1951; Whitehead, 1925/1975). Because I find the logic of these approaches to gender compelling, and because their goal is so obviously a feminist one, it is worth questioning the response of anti-science and especially anti-experimental postmodernists in psychology and elsewhere to the methods and findings that define this approach to gender.

SOCIAL CONSTRUCTIONISM, SOCIOBIOLOGY, AND PSYCHOANALYSIS

Part II of this volume contains three chapters on the social constructionist, sociobiological, and psychoanalytic views of gender. I will have less to say about them because they represent broader theoretical statements about gender and do not provide evidence of the same depth as the chapters in the previous section. However, their strength lies in the issues they raise about the nature of difference and the message they bring about the consequences of gender differences.

Social Constructionism

Social constructionism is psychology's code word for postmodernism and it has been accompanied of late by proposals of a uniquely feminist method (Hare-Mustin & Marecek, 1990b; Reinharz, 1992; for a discussion of perspectives on method, see Riger, 1992). That version of social construction is absent in this volume. Instead, Beall's spin (Chapter 5, this volume) on social constructionism is to view gender as a product of culture (by showing variability in notions of gender across cultures) and social practice and to express the always needed awareness about biases in scientific practice. In this form, a social constructionist approach is congruent with the assumptions that underlie much social psychological research on gender (see Geis, Chapter 2; Cross & Markus, Chapter 3; Lott & Maluso, Chapter 4). In fact, Beall explicitly notes: "However, I do not advocate discontinuing scientific inquiry about the nature of gender and gender relations" (p. 144), and here Beall's view may not represent other social–constructionist positions. Beall's social constructionism is a view with which few psychologists would disagree and her observations provide useful points of comparison in both form and content. For example, her strategy is to look for differences across cultures, and use such differences to educate us about the importance of sociocultural patterning in creating the varied face of gender. This form of argument is quite similar to those who look cross-culturally for evidence about the *similarity* of sex-linked behaviors across cultures (e.g., Buss, 1989; Kenrick & Trost, Chapter 6). Potentially useful discussions about the value and interpretation of cross-cultural data can occur on topics on which social constructionists and sociobiologists both claim to have evidence: By what criteria is an observation to be defined a similarity or difference? How should superficial differences between cultures be extracted from a cross-cultural examination to assure that accurate evidence of differences are being obtained? Can similarities appear in spite of differing underlying causes? For such questions to be meaningfully addressed, criteria for identifying similarities and differences must be explicitly asserted and an attempt to understand the mechanisms

which two cultures are set apart must be posited at a level more specific than what is typically captured by the term "culture."

The Evolutionary Perspective

In scientific writing, it is often the case that when one says "the scientific method," one is referring to the method of experimentation generally attributed to Bacon (see Eiseley, 1973). But there is a close competitor, the differential equation, which allows stating theories in a rigorous, precise, and compact form. Since Newton and Bacon, the differential equation and the controlled experiment have been, to construct a stodgy metaphor, the wind and sail of science. Sometimes a science is able to effectively exploit only one of these methods. Social psychology, for example, is largely an experimental science with not much of a role, in its current state, for detailed systemic theories of the kind that differential equations are able to express elegantly. By contrast, fields such as plate tectonics, so-called GUTs (Grand Unified Theories) (see Carrigan & Trower, 1989) in physics or big-bang cosmology, are almost exclusively expressed in differential equations with (currently) not much of a role for experimental treatments.

In this context, sociobiological approaches are alluring because of the prospect they offer for combining the rigor of the differential equation with the power of controlled observation, if not experimentation. Since well before Darwin, the observational demands of biology have been well understood (see Eiseley, 1961; Desmond, 1989). In this century, however, biology has taken on new mathematical and computational dimensions that have greatly expanded its explanatory power. Since the publication of Lotka's groundbreaking book in 1926 (Lotka, 1956), mathematical models have become ubiquitous in biology (e.g., Hoppenstadt, 1982; Pigelou, 1969; Smith, 1971).

The primary power of these models lies in the fact that differential equations represent relative rates of change (dy/dx represents the rate of change of y wrt x, and the integral of y wrt x gives the area under the curve obtained by plotting y with respect to x). As a result, a differential equation is able to relate one or more rates of change to some absolute characteristics of the environment. For example, in elementary physics, to say that the acceleration due to gravity is 32 feet per second squared is to say that a particular rate (of change of velocity with respect to time) is a constant and is equal to the product of Newton's constant times the mass of the earth divided by the square of the earth's radius (which in turn is approximately 32 feet per second squared). Thus, differential equations provide a way of characterizing causal mechanisms that effect change in an environment, both suddenly and slowly and directly and indirectly.

It is helpful to understand the role that these equations play in sociobiological modeling. An equation that is one of the oldest in mathematical biology will serve, namely, the so-called predator–prey equation, sometimes known as the Lotka–Volterra equation after its inventors. The model is about an ecological situation that involves two species, one of which preys on the other. Let $H(t)$ be the population of the prey and $P(t)$ the population of the predator.[1] The differential equations that make up the classic predator-prey model are:

$$dH/dt = aH - \alpha HP \quad (1)$$

$$dP/dt = -cP + \gamma HP \quad (2)$$

where $H(t)$ and $P(t)$ are the populations of prey and predator at time t and a, c, α, and γ are simply constants that are all assumed to be positive. Solving these equations leads to some qualitative conclusions:

1. The sizes of the predator and prey oscillate.
2. The period of oscillation is independent of the initial conditions (i.e., the initial values of H and P). Rather, it is dependent on the parameters a, c, α, and γ.
3. The predator and prey populations are out of phase by one quarter cycle; that is, there is a one-quarter cycle time difference in when the predator and prey population reach a maximum or a minimum, and the prey's population reaches its maximum one-quarter cycle before that of the predator.

The qualitative conclusions are derived from careful analysis of the solutions of these equations. It is worth noting these equations in some detail, because they represent one of the first examples of theoretical models of population biology that were also compared with data about the actual population growth and reduction (in fisheries). It is worth repeating Volterra's assessment:

> Both D'Ancona and I working independently were equally satisfied in comparing results which were revealed to us separately by calculus and by observation, as these results were in accord; showing for instance that man [sic] in fisheries, by disturbing the natural condition of proportion of two species, one of which feeds upon the other, causes diminution in the quantity of the

[1] Of course, we make the usual assumptions:
(1) when the population of prey is zero the predator dies out, i.e. $dP/dt = -cP$, $c > 0$, when $H = 0$;
(2) in the absence of the predator, the prey grows without bound, i.e. $dH/dt = aH$, $a > 0$, for $P = 0$.

species that eats the other, and an increase in the species fed upon. (See Chapman, 1931, p. 410)

I have attempted this rather detailed explanation because I wish to point out an underlying commonality to the theories described by this rather simple model. First, there is a clear mechanism at work: a resource depletion mechanism and an equilibrating resource-generation mechanism, and the connection between these two is clearly expressed by the equation. Second, there is substantial empirical evidence to support the constraint that connects the two mechanisms; that is, the data support the differential equation as being a realistic if somewhat abstract characterization of the ecosystem under study.

The evolutionary efforts reported by Kenrick and Trost follow a different strategy. Like Beall, Kenrick and Trost also gather data from a variety of cultures, but in contrast, their focus is on the abundance of similarity to be observed through cross-cultural analyses. Kenrick and Trost do a fine job of gathering data about the similarity across cultures in gender-specific patterns of aggression, mate-selection, and so on. While they provide examples of quaint customs (e.g., among the Palahari of Northern India, brothers pool their resources to purchase a wife they share; if they accumulate more wealth, they will purchase additional wives), it is not always clear what theory is explicated by such behavior (e.g., the pooling of resources for a wife). What is difficult to detect is the mechanism that explains such patterns of behavior.

Kenrick and Trost's observations are not to be underestimated. Such observations can prompt hypotheses about the nature of differences between females and males. However, such observations are not easily amenable to specific tests of mechanisms that are needed if an explanation of the observed behavior is a concern. Anthropological observations are often unsatisfactory if they are not accompanied by a method for identifying an explanatory mechanism responsible for the behavior. For example, data of the sort obtained by Dickemann (1979) were challenged on this basis (among others) by Kitcher (1989). Descriptive analyses of similarity in worldwide customs, no matter what their degree of similarity, must be subjected to some test of the ecosystem under study. The absence of mechanisms to explain interesting cultural comparisons are a problem with many large-scale cross-cultural analyses, regardless of the explanation to which the theory is partial (see Williams & Best, Chapter 9, this volume, for a discussion). Sociobiology may be a field with great potential, but psychology's contribution rests on the ability to provide explanations rather than description. In the absence of a method that allows the examination of mechanisms, comments about the specific claims of this evolutionary approach to gender must wait.

A Variation on a Psychoanalytic Theme

Freud's (1907/1953, 1925/1961, 1931/1961) ideas of gender development have remained central at least in psychoanalytic circles where gender development is discussed.

It is clear that as early as when Freud's theory was first proposed, critical reaction followed (see Chodorow, 1989), but it is also clear that feminist theory has posed among the more serious challenges to the core of the original psychoanalytic theory of gender development. Among such commentators, almost none is as well recognized as Chodorow (1989), who has persuasively argued that a critical advantage is gained by offering reformulations from within the confines of Freud's account of personality and gender development. Because I work far from the boundaries of psychodynamic theory, it is perhaps difficult for me to appreciate the significance of the dialogue in which feminist psychoanalysts are engaged. Yet, it is clear that a feminist psychoanalysis, whether one agrees with its tenets or not, has provoked critical questions about a ubiquitous theory of gender development.

Fast proposes a revision of Freud's account that, like other revisions, places greater importance on social and cognitive factors in development. Although such efforts result in more persuasive theories of development, they also create a dilemma. A "socializing" of psychoanalytic accounts of gender development makes such theories more plausible and testable than the original version. Yet, that same broadening also threatens the centrality of Freud's analysis of gender. For example, Fast (Chapter 7, this volume) notes:

> Although the infant itself does not yet experience its genitals in gender terms, they probably color patterns of child care in subtle but pervasive ways. The infant's activities—vigorous, languid, alert, tender, assertive, curious or angry—may be variously encouraged or discouraged by caregivers as sex appropriate. (p. 180)

Such statements raise legitimate questions about what remains of the psychoanalytic components of theories to retain them as viable accounts. Discoveries of a cognitive unconscious (Kihlstrom, 1990) will make social cognition accounts of gender development even more persuasive and accessible, and at some point, such alternative views inserted into dynamic theories will produce hybrids that contain the advantages of both accounts (psychoanalytic and social, cognitive) or a greater and greater shift in emphasis toward social learning and social cognition explanations.

TIME AND SPACE FRONTIERS OF GENDER

Two chapters in this volume are concerned primarily with gender development over time (Jacklin & Reynolds, Chapter 8) and across cultures (Best

& Williams, Chapter 9). Jacklin and Reynolds present a summary of major approaches to childhood socialization. While they review social learning, social–cognitive (schema), and behavioral–genetic accounts, two of which have been presented in other chapters in this volume, they bring a different perspective by focusing on childhood socialization, a component that is missing from the other accounts (with the exception of Best & Williams). In their discussion of the meaning of biological differences, Jacklin and Reynolds raise the issue of the attitude toward the meaning and influence of biological factors in gender differentiation. Their point about the misuse of biological theories to maintain differences is useful, as is their solution which emphasizes the need among psychologists to attend to findings from research on biological differences. This is an important issue and one that will be addressed only by the participation of feminist scientists who are able to explicitly challenge earlier theories of gender difference.

Best and Williams provide a useful account of the cross-cultural approach to gender. They educate readers about the purpose of cross-cultural research in particular to provide an analysis of the problems that confront traditional cross-cultural comparisons of group difference. Their experience with cross-cultural data is invaluable to those who must acquire the skills to conduct such research, especially because such knowledge is not a component of traditional graduate training. Their own cross-cultural research, demonstrating how culture can shape gender development, is shown by the greater variation between than within groups. A group for comparison purposes is identified as a nation state, classified along a continuum from traditional to modern. (Such a classification must be questioned given the continually changing face of national borders.) Best and Williams are appropriately cautious in reporting and interpreting findings, pointing out lack of differences obtained across nations (as in the case of masculinity and femininity) as well as the presence of difference (as in the case of the strength of incorporating sex stereotypes into definitions of self).

A difficulty with cross-cultural research in general is the absence of strong explanatory concepts coupled with the analysis of fixed variables such as culture and gender (the latter problem is noted by Best & Williams, Chapter 9, this volume, as well). Although we learn that "Western" cultures differ from "Eastern" cultures (e.g., Markus & Kitayama, 1991) and that "traditional" cultures differ from "modern" ones, it is not clear what mechanisms promote and maintain such differences. This approach is not wholly satisfactory because often "culture" or "nation" becomes a post hoc catchall for observed differences. The problem is symmetric to the one encountered in sociobiological analyses. It is no longer convincing to find differences across cultures and conclude that sociocultural forces have produced that difference, just as it is unconvincing that a lack of differences

across culture can be considered evidence in support of sociobiol al mechanisms. The strength of Best and Williams's chapter is their sy n-atic effort at documenting cultural differences in spite of their ob us awareness of the difficulty in interpretation and the limits of the me d.

It is interesting that cross-cultural psychologists tend not to ed historic events that may tie superficially discrepant cultures together (g., countries that have a shared history of colonialism), or dissociate su rfi-cially similar cultures (e.g., groups that are equivalent in socioeco mic status but considered racially discrepant) and ask what differences ist between them. Analyses of discrepant countries and cultures migh be more meaningful if they were guided by new specifications for co ng differences rather than traditional ones such as nation state boundari or exclusively Western views of similarity and difference. In attempti to understand the underlying mechanisms by which culture and bi gy shape cognition and personality, the approach used by Best and Will ns, of including a developmental perspective (within the cross-cultural e), may be useful.

Cross-cultural research will also be enriched if culture is sought c ser to home than in protracted analyses of the unfamiliar customs of lien peoples. In the superbly successful segregation that has been effect in most of the urban United States, vast cultural differences (albeit less e otic ones) may be examined for questions about culture and gender. The culture of Yale students and faculty on my side of Prospect Stree nd the starkly distinct culture of New Haven residents on the other can ld a cross-cultural analysis that will be quite revealing about two di nct cultures, and one that is less prone to the hazards of foreign travel.

CONCLUSION

I began this chapter with words spoken by Aristotle some time ago a by Catharine MacKinnon more recently. There are many differences be en these individuals, and I chose their comments to represent dissimilar v ws of gender difference. The distinction lies as much in the content of eir comments (which is obvious enough) as in the implication of each. V ile Aristotle's comment provides a description of difference (truth o hat description aside), MacKinnon attempts an explanation for gender d fer-ences. As in all sciences, this distinction between description and exp na-tion is crucial in measuring psychology's progress on the questi of gender. A variety of psychologists have presented their accounts of g der in this volume, and many have attempted to provide explanations w hin the framework of a preferred theory. A true measure of their contribu ns will lie in the extent to which explanation is sought at all and subsequ tly

in the accuracy of the explanations in representing the nature of female and male.

ACKNOWLEDGMENTS

I thank R. Bhaskar for helpful comments. Preparation of this chapter was supported in part by the National Science Foundation Grant DBC 9120987. Correspondence concerning this chapter may be addressed to the author at Department of Psychology, Yale University, P.O. Box 11A Yale Station, New Haven, CT 06520–7447.

REFERENCES

Aristotle. (1992). *The politics* (T. A. Sinclair, Trans.) (revised and re-presented by T. J. Saunders). New York: Penguin Books.

Ashmore, R. D., & Del Boca, F. (1986). *The social psychology of female–male relations: A critical analysis of central concepts*. New York: Academic Press.

Banaji, M. R., Hardin, C., & Rothman, A. J. (in press). Implicit sterotyping in person judgment. *Journal of Personality and Social Psychology*.

Banaji, M. R., & Greenwald, A. G. (1993). Implicit stereotyping and prejudice. In M. P. Zanna & J. M. Olson (Eds.), *The psychology of prejudice: The Ontario symposium* (Vol. 7, pp. 55–76). Hillsdale, NJ: Erlbaum.

Banaji, M. R., LaFrance, M., & Beall, A. E. (1992). *Gender and the expression of emotional intensity*. Unpublished manuscript, Yale University, New Haven, CT.

Bem, S. L. (1983). Gender schema theory and its implications for child development: Raising gender-aschematic children in a gender-schematic society. *Signs: Journal of Women in Culture and Society, 8*, 4, 598–616.

Bem, S. (1993). *The lenses of gender*. New Haven, CT: Yale University Press.

Bleier, R. (1988). Sex differences research: Science or belief? In R. Bleier (Ed.), *Feminist approaches to science* (pp. 147–164). New York: Pergamon Press.

Brody, L. R. (1985). Gender differences in emotional development: A review of theories and research. In A. J. Stewart & M. B. Lykes (Eds.), *Gender and personality: Current perspectives on theory and research* (pp. 14–61). Durham, NC: Duke University Press.

Brown, V., & Geis, F. L. (1984). Turning lead into gold: Leadership by men and women and the alchemy of social consensus. *Journal of Personality and Social Psychology, 46*, 811–824.

Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences, 12*, 1–49.

Campbell, D. T. (1986). Science's social system of validity-enhancing collective belief change and the problems of the social sciences. In D. W. Fiske & R. A. Shweder (Eds.), *Metatheory in social science: Pluralisms and subjectivities* (pp. 108–135). Chicago: University of Chicago Press.

Carrigan, R. A., & Trower, W. P. (1989). *Particle physics in the cosmos*. San Francisco: W. H. Freeman.

Chapman, R. (1931). *Animal ecology with special reference to insects*. New York: McGraw-Hill.

Conant, J. B. (1951). *On understanding science*. New York: New American Library of World Literature.

Chodorow, N. J. (1989). *Feminism and psychoanalytic theory*. New Haven, CT: Yale University Press.

Deaux, K. (1984). From individual differences to social categories. *American Psychologist, 39*, 2, 105–116.

Deaux, K., & Emswiller, T. (1974). Explanations of successful performance on sex-linked tasks: What is skill for the male is luck for the female. *Journal of Personality and Social Psychology, 29*, 80–85.

Desmond, A. (1989). *The politics of evolution: Morphology, medicine and reform in radical London*. Chicago: University of Chicago Press.

Dickemann, M. (1979). Female infanticide, reproductive strategies, and social stratification: A preliminary model. In N. Chagnon & W. Irons (Eds.), *Evolutionary biology and human social behavior: An anthropological perspective* (pp. 321–367). North Scituate, MA: Duxbury.

Dupre, J. (1990). Global versus local perspectives on sexual difference. In D. L. Rhode (Ed.), *Theoretical perspectives on sexual differences* (pp. 47–62). New Haven, CT: Yale University Press.

Eagly, A. H. (1983). Gender and social influence. A social psychological analysis. *American Psychologist, 38*, 971–981.

Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation*. Hillsdale, NJ: Erlbaum.

Eagly, A., H., & Carli, L. L. (1981). Sex of researchers and sex-typed communications as determinants of sex differences in influenceability: A meta-analysis of social influence studies. *Psychological Bulletin, 90*, 1–20.

Eagly, A. H., & Wood, W. (1982). Inferred sex differences in status as a determinant of gender stereotypes about social influence. *Journal of Personality and Social Psychology, 43*, 915–928.

Eiseley, L. (1961). *Darwin's century*. New York: Doubleday.

Eiseley, L. (1973). *The man who saw through time*. New York: Scribner.

Epstein, C. F. (1988). *Deceptive distinctions: Sex, gender, and the social order*. New Haven, CT: Yale University Press and New York: Sage.

Farganis, S. (1986). *The social reconstruction of the female character*. Totowa, NJ: Rowman & Littlefield.

Fausto-Sterling, A. (1985). *Myths of gender*. New York: Basic Books.

Fiske, D. W., & Shweder, R. A. (Eds.). (1986). *Metatheory in social science: Pluralisms and subjectivities*. Chicago: University of Chicago Press.

Feingold, A. (1988). Cognitive gender differences are disappearing. *American Psychologist, 43*, 2, 95–103.

Freize, I. H., Parsons, J. E., Johnson, P. B., Ruble, D. N., & Zellman, G. L. (1978). *Women and sex roles: A social psychological perspective*. New York: W. W. Norton.

Freud, S. (1953). The sexual enlightenment of children. In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud*

(Vol. 7, pp. 135–243). London: Hogarth Press. (Original work published 1907)

Freud, S. (1961). Female sexuality. In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 21, pp. 223–243). London: Hogarth Press. (Original work published 1931)

Freud, S. (1961). Some psychical consequences of the anatomical distinction between the sexes. In J. Strachey (Ed. and Trans.), *The standard edition of the complete psychological works of Sigmund Freud* (Vol. 19, pp. 248–258). London: Hogarth Press. (Original work published 1925)

Geis, F. L. (1983). *Gender schemas and achievement: Performance and recognition*. Invited address to the convention of the Eastern Psychological Association, Philadelphia, PA.

Geis, F. L., Boston, M., & Hoffman, N. (1985). Sex of authority role models and achievement by men and women: Leadership performance and recognition. *Journal of Personality and Social Psychology, 49*, 636–653.

Geis, F. L., Brown, V., Jennings, J., & Porter, N. (1984). T. V. commercials as achievement scripts for women. *Sex Roles, 10*, 513–525.

Genova, J. (1989). Women and the mismeasure of thought. In N. Tuana (Ed.), *Feminism and science* (pp. 211–227). Bloomington, IN: Indiana University Press.

Gergen, K. J. (1985). The social constructionist movement in modern psychology. *American Psychologist, 40*, 255–265.

Gilligan, C. (1982). *In a difference voice: Psychological theory and women's development*. Cambridge, MA: Harvard University Press.

Goldberg, P. (1968). Are women prejudiced against women? *Transaction, 5*, 28–30.

Gould, S. J. (1981). *The mismeasure of man*. New York: W. W. Norton.

Hall, J. A. (1984). *Nonverbal sex differences*. Baltimore, MD: Johns Hopkins University Press.

Hansen, R. D., & O'Leary, V. E. (1985). Sex-determined attributions. In V. E. O'Leary, R. K. Unger, & B. S. Wallston (Eds.), *Women, gender, and social psychology* (pp. 67–99). Hillsdale, NJ: Erlbaum.

Haraway, D. (1989). *Primate visions: Gender, race, and nature in the world of modern science*. New York: Routledge.

Harding, S. (1986). *The science question in feminism*. Ithaca, NY: Cornell University Press.

Hare-Mustin, R. T., & Marecek, J. (1990a). *Making a difference: Psychology and the construction of gender*. New Haven, CT: Yale University Press.

Hare-Mustin, R. T., & Marecek, J. (1990b). Gender and the meaning of difference: Postmodernism and psychology. In R. T. Hare-Mustin & J. Marecek (Eds.), *Making a difference: Psychology and the construction of gender*. New Haven, CT: Yale University Press.

Hintzman, D. T. (1990). 25 years of learning and memory: Was the cognitive revolution a mistake? In D. E. Meyer & S. Kornblum (Eds.), *Attention and performance* (Vol. 14). Hillsdale, NJ: Erlbaum.

Hirt, E. R. (1990). Do I see only what I expect? Evidence for an expectancy-guided retrieval model. *Journal of Personality and Social Psychology, 58*, 937–951.

Hoppenstadt, F. C. (1982). *Mathematical methods of population biology*. Cambridge, England: Cambridge University Press.

Hubbard, R. (1988). Some thought about the masculinity of the natural sciences. In M. M. Gergen (Ed.), *Feminist thought and the structure of knowledge* (pp. 1–15). New York: New York University Press.

Hubbard, R. (1990). The political nature of "human nature." In D. Rhode (Ed.), *Theoretical perspectives on sexual difference*. New Haven, CT: Yale University Press.

Hyde, J. S. (1981). How large are cognitive gender differences? A meta-analysis using w and d. *American Psychologist, 36*, 892–901.

Hyde, J. S. (1984). How large are gender differences in aggression? A developmental meta-analysis. *Developmental Psychology, 20*, 722–736.

Keller, E. F. (1985). *Reflections on gender and science*. New Haven, CT: Yale University Press.

Kihlstrom, J. (1990). The psychological unconscious. In L. A. Pervin (Ed.), *Handbook of personality: Theory and research* (pp. 445–464). New York: Guilford.

Kitcher, P. (1990). *Vaulting ambition*. Cambridge, MA: MIT Press.

Kohlberg, L. (1981). *The philosophy of moral development*. San Francisco: Harper & Row.

LaFrance, M., & Banaji, M. (1992). Toward a reconsideration of the gender-emotion relationship. In M. S. Clark (Ed.), *Emotion and social behavior: Review of personality and social psychology*, (Vol. 14, pp. 178–201). London: Sage.

Lehrke, R. G. (1972). A theory of x-linkage of major intellectual traits. *American Journal of Mental Deficiency, 76*, 611–619.

Lewin, M. (Ed.). (1984). *In the shadow of the past: Psychology portrays the sexes*. New York: Columbia University Press.

Lewontin, R. C., Rose, S., & Kamin, L. J. (1984). *Not in our genes*. New York: Pantheon Books.

Lotka, A. J. (1956). *Elements of mathematical biology*. New York: Dover.

Lott, B. (1987). Sexist discrimination as distancing behavior: I. A laboratory demonstration. *Psychology of Women Quarterly, 11*, 47–58.

Maccoby, E. E., & Jacklin, C. N. (1974). *The psychology of sex differences*. Stanford, CA: Stanford University Press.

MacKinnon, C. A. (1990). Legal perspectives on sexual difference. In D. L. Rhode (Ed.), *Theoretical perspectives on sexual difference*. New Haven, CT: Yale University Press.

Markus, H. R., & Cross, S. (1990). The interpersonal self. In L. A. Pervin (Ed.), *Handbook of personality: Theory and research* (pp. 576–608). New York: Guilford Press.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*, 224–253.

Markus, H. R., & Oyserman, D. (1988). Gender and thought: The role of the self-concept. In M. Crawford & M. Hamilton (Eds.), *Gender and thought* (pp. 100–127). New York: Springer-Verlag.

McGuire, W. J., & McGuire, C. V. (1988). Content and process in the experience of self. *Advances in Experimental Social Psychology, 21*, 97–144.

Merton, R. K. (1973). *The sociology of science*. Chicago: University of Chicago

Miller, D. T., & Turnbull, W. (1986). Expectancies and interpersonal processes. *Annual Review of Psychology, 37*, 233–256.

Miller, N. E. & Dollard, J. (1941). *Social learning and imitation*. New Haven: Yale University Press.

Nisbett, R., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on neural processes. *Psychological Review, 84*, 231–259.

O'Leary, V. E., Unger, R. K., & Wallston, B. S. (1985). *Women, gender, and social psychology*. Hillsdale, NJ: Erlbaum.

Pigelou, E. C. (1969). *An introduction to mathematical ecology*. New York: Wiley.

Porter, N., & Geis, F. L. (1981). Women and nonverbal leadership cues: When seeing is not believing. In C. Mayo & N. Henley (Eds.), *Gender and nonverbal behavior*. New York: Springer-Verlag.

Porter, N., Geis, F. L., Cooper, E., & Newman, E. (1985). Androgyny and leadership in mixed-sex groups. *Journal of Personality and Social Psychology, 49*, 803–823.

Reinharz, S. (1985). Feminist distrust: Problems of context and context in sociological work. In D. N. Berg & K. K. Smith (Eds.), *The self in social inquiry: Researching methods* (pp. 153–172). Newbury Park, CA: Sage.

Reinharz, S. (1992). *Feminist methods in social research*. Oxford: Oxford University Press.

Rhode, D. L. (1990). Definitions of difference. In D. L. Rhode (Ed.), *Theoretical perspectives on sexual differences* (pp. 197–212). New Haven, CT: Yale University Press.

Ridgeway, C. L. (1992). *Gender, interaction, and inequality*. New York: Springer-Verlag.

Riger, S. (1992). Epistemological debates, feminist voices. *American Psychologist, 47*, 6, 730–740.

Singh, J. (1964). *Great ideas in operations research*. New York: Dover.

Skrypnek, B. J., & Snyder, M. (1982). On the self-perpetuating nature of stereotypes about women and men. *Journal of Experimental Social Psychology*, 18, 277–291.

Smith, J. M. (1971). *Mathematical ideas in biology*. Cambridge, England: Cambridge University Press.

Snyder, M., & Swann, W. B., Jr. (1978). Behavioral confirmation in social interaction: From social perception to social reality. *Journal of Experimental Social Psychology, 14*, 148–162.

Spence, J. T., & Helmreich, R. L. (1978). *Masculinity and femininity*. Austin, TX: University of Texas Press.

Snyder, M., Tanke, E. D., & Berscheid, E. (1977). Social perception and interpersonal behavior: On the self-fulfilling nature of social sterotypes. *Journal of Personality and Social Psychology, 35*, 656–666.

Stern, M., Karraker, K. H. (1989). Sex stereotyping of infants: A review of gender labeling studies. *Sex Roles, 20*, 501–522.

Stewart, A. J., & Lykes, M. B. (1985), *Gender and personality: Current perspectives on theory and research*. Durham, NC: Duke University Press.

Swim, J., Borgida, E., Maruyama, G., & Myers, D. G. (1989). Joan T. McKay versus John T. MacKay: Do gender stereotypes bias evaluations? *Psychological Bulletin, 105*, 409–429.

(continued from previous page)

Unger, R. K. (1988). Psychological, feminist, and personal epistemology: Transcending contradiction. In M. M. Gergen (Ed.), *Feminist thought and the structure of knowledge* (pp. 124–141). New York: New York University Press.

Wallston, B. S., & O'Leary, V. E. (1981). Sex makes a difference: Differential perceptions of women and men. In L. Wheeler (Ed.), *Review of personality and social psychology* (pp. 9–41). Newbury Park, CA: Sage.

Whitehead, A. N. (1975). *Science and the modern world*. Cambridge, MA: Cambridge University Press. (Original work published 1925)

Williams, J. E., & Best, D. L. (1990). *Measuring sex stereotypes: A multination study*. Newbury Park, CA: Sage.

Wood, W., & Karten, S. J. (1986). Sex differences in interaction style as a product of perceived sex differences in competence. *Journal of Personality and Social Psychology, 50*, 341–347.