

Book Reviews

Annual Review of Sex Research (Vol. XIII). Edited by Julia R. Heiman. Society for the Scientific Study of Sexuality, Allentown, Pennsylvania, 2002, 388 pp., \$59.00.

Reviewed by Irene Hanson Frieze, Ph.D.¹

This is Volume XIII in the series of annual reviews published by the Society for the Scientific Study of Sexuality. Each of these volumes includes a number of review articles on topics selected to represent current issues in the field of sexuality research. One focus of this volume appears to be biological factors in sexuality, with three of the nine papers focused on this exclusively. This choice of topics corresponds to the increasing interest in the role of biology among sex researchers. Each of the papers in this volume provides important information for the sexuality researcher. The collection may be even more relevant for those teaching courses in sexuality and for graduate students wanting to gain a broader perspective.

The first paper by Giami is on sexual health. As Giami notes, several European countries, as well as the United States and the World Health Organization, have developed statements in the late twentieth century that outline the definition of sexual health, as defined by recognized experts. Rather than focusing on reproduction, as was the case a century ago, these statements assume that sexuality and sexual pleasure are part of the well-being of the individual and are basic rights of the person. But, there are differences among the different countries, as Giami clearly points out. Through analyzing these cross-cultural similarities and differences, one gains a much greater appreciation of the biases of one's own culture.

The second paper by Rosen and McKenna discusses the physiological mechanisms involved with the new drugs, such as Viagra, for treatment of male erectile dysfunction. These drugs have become quite successful and are widely used around the world, in spite of their high cost. The fact that these drugs are now available and widely advertised has created an unanticipated effect of there now being more open discussion of male erection

problems and sexual problems generally. Oddly though, as Rosen and McKenna note, these drugs are not helpful generally for women, even though they do appear to have similar physiological effects in both sexes.

A third paper also looks at biological factors in human sexuality, but here the focus is on human sexual orientation. The underlying causes of sexual orientation have been a central issue for many years and many theories about this have been proposed and tested. As Mustanski, Chivers, and Bailey discuss in their paper, there is now clear evidence that there is a genetic component to sexual orientation in men, but the evidence for women is less clear. This research is ongoing and awaits evidence about specific genetic factors from the human genome project to clarify these genetic mechanisms. It is not clear why biological factors are generally less successful in predicting female than male sexual orientation. Part of the answer may be found in a later paper in the volume on bisexuality.

Issues of sexual orientation as they apply to nonhuman animals are taken up in the next paper by Vasey. As Vasey discusses, there is evidence of preference for same-sex partners in several species; however, clear evidence about why such preferences exist is not yet available. Several theories have been proposed and tested. For example, many studies have been done to test the role of hormonal factors during prenatal development and in adulthood for various species, but the findings are mixed, even in nonhumans. There is also a lack of evidence that dominance or other "sociosexual" variables can reliably predict partner preferences. Here again in this paper, as in others in this volume, Vasey argues that more research is needed.

Bisexuality and the many cultural assumptions underlying the research on this topic are addressed by Rodriguez Rust. Rodriguez Rust argues that rather than thinking of bisexuals as being somehow both heterosexual and homosexual, they should be thought of as individuals who make sexual choices not on the basis of who is male or female, but on personality or other factors than gender. To more clearly understand bisexuals, we need to develop better measurements of sexual orientation and to move beyond the idea of Kinsey's scale that assumes everyone can be placed on a continuum from exclusively heterosexual to exclusively homosexual.

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The next paper by Reichert takes up an issue that has been the topic of research for many years—the role of sexual imagery in advertising. It is well known that advertising that links one's product to sexuality in some way can result in more sales of the product. As Reichert points out, the issue for academic researchers is not whether sex sells, but instead we should be concerned with developing a better understanding of the mechanisms by which sexual content influences consumers. Most of this work has been supported in the past by those wanting to sell more of their product. But, Reichert suggests that more scientific and less commercial involvement is needed in this investigation. Such research would add to a broader understanding of human sexuality. Such research might also clarify for market researchers why sexual imagery is not always successful.

Chrisler and Caplan address another topic in their paper that has long been of interest to researchers, the premenstrual syndrome. As they point out, there appears to be a stronger belief about the symptoms of PMS in the research community as well as in the general public than can be reliably documented in controlled studies. The PMS label appears to have taken on a life of its own. Chrisler and Caplan outline some of the societal context that may help us understand why the PMS label has been so readily accepted. Even more problematic, in their view, is the inclusion of PMDD (Premenstrual Dysphoric Disorder) as a psychiatric disorder in the *DSM-IV*. Perhaps the association of all types of negative behaviors and symptoms in women with the menstrual cycle is an example of overzealousness in the application of biological explanations.

In a paper by Loeb et al., another controversial issue is explored. This paper reviews research on the effects of child sexual abuse on later sexual functioning. As the paper briefly mentions, one major issue in interpreting research findings is that the age of the involved "child" can vary so much. Many studies use any activity under the age of 18 as "childhood" sexual activity, even though it is clear that much consensual sex with similarly aged peers occurs in adolescents under the age of 18. Combining these consensual activities with forced or coerced experiences before age 12 or even under the age of 5, as many studies do, makes it almost impossible to really understand the phenomenon being discussed. Unfortunately, most of the literature uses the under-18 criterion, and this review of published literature, by necessity, suffers from the same problem. Not surprisingly, this review concludes that no firm conclusions can be drawn about the effects of child sex abuse. Perhaps this is due to lack of clear definitions?

In the final paper, Leonard and Follette discuss some treatment strategies for adult women with sexual

dysfunctions who have a history of child sexual abuse. As Leonard and Follette point out, sexual problems are often assumed to be common in child sexual abuse "survivors," but in empirical studies, such problems are not always seen. As they argue, "The impact CSA has on sexual functioning is far from being clearly understood and explained" (p. 384). Better treatment models are needed. Leonard and Follette explain that as new models are developed and tested, they need to more clearly build on research designed to better understand women's sexual responding. Women's sexuality includes nonsexual needs and desires such as closeness and acceptance, and does not fit well into models based on male sexuality, according to these researchers.

Looking across these papers, one theme that emerges is that there may well be very different mechanisms that underlie male and female sexuality in humans. Drugs developed to treat erectile disorder in men do affect the clitoris in women, but this does not appear to have a direct effect on their sexual feelings. But, for men, enhancing erections appears to be quite effective for most men in treating problems with sexual desire. Mustanski et al. show us that genetic influences on sexual orientation are clearer in men than in women. Rust suggests that "women are more likely than men to have multiple sexual self-identities" (p. 222). And, Leonard and Follette point to the need to better understand female sexual dysfunction and argue that models developed for men may not apply. Perhaps a future volume of the *Annual Review of Sex Research* needs to address gender more directly.

The Society for the Scientific Study of Sexuality continues its service to the field of sex research by sponsoring these volumes. The papers in this volume, as in others, serve as important resources for researchers, teachers, and students. These reviews of central topics in the field pull together articles and provide expert commentary that any serious scholar will find of interest. Each paper suggests important topics that we do understand and others that need additional research.

Handbook of the Psychology of Women and Gender.

Edited by Rhoda K. Unger. John Wiley, New York, 2001, 423 pp., \$64.99.

Reviewed by Sari M. van Anders, M.A.²

The goal of *Handbook of the Psychology of Women and Gender (The Handbook)* is to provide a current

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review of the literature on psychological/psychosocial thinking on women and gender. It is intended as an authoritative handbook for graduate students, researchers, and clinicians in the field or with related interests. It might be a useful, though mammoth, guide for a graduate course in the area; I had intended on taking a graduate course in this field but *The Handbook* has more than filled this function. Still, *The Handbook* would likely be most helpful as a desk reference; some chapters are excellent sources of references, whereas others reference a specific area (e.g., feminist social constructionism). Although *The Handbook* largely achieves its goal with a comprehensive and timely treatment of the literature, those interested in biopsychological (including evolutionary) approaches to this field in addition to sociocultural work will find meager coverage (two chapters of 25). Because this research is often contentious, I hoped to find a critical analysis of, and engagement with, biopsychological contributions to the psychology of women and gender (e.g., neuropsychology or neuroscience). I was disappointed at the deficit, but found *The Handbook* an enjoyable, pedagogical, and thought-provoking read.

I looked forward to *The Handbook* because I enjoyed the prospect of reading feminist treatments of psychological research—because of this prospect, I imagine others might be reluctant. Some chapters did take an overtly feminist standpoint, but many did not. For feminists, nonfeminists, and especially antifeminists, *The Handbook* provides a solid foundation in what feminist research is, what research on women and gender is, and how the two may intersect. Antifeminist academics do not always know exactly what it is they are so *anti* about, and a thorough reading of *The Handbook* would at least provide an educated background.

I also wondered, not having been exposed to feminist psychological research, what forms feminist research would take. Would it be largely qualitative? Would it downplay quantitative inquiry (the type I prefer in my own research)? Would it be overly politicized, not grounded in research? Although *The Handbook* did reference and explain qualitative research, most research detailed was quantitative and differing methodologies were given respectful treatment. *The Handbook* was definitely not overpoliticized, and its treatment of political issues showed how important these issues are, why they deserve attention, and why a systematic grounding in research is necessary.

The Handbook consists of five parts which will prove to be of varying interest to readers depending on their background and intent. I found it to be a relatively well-balanced review of the literature. Although the back cover tells us variables like sexual orientation

and race/ethnicity are emphasized throughout, I was surprised at how little attention was paid to gays, lesbians, and non-White populations. Bisexual and transgendered individuals received scant consideration. The emphasis on sexual orientation appeared to be repeated admonitions that a topic needed to include the lesbian and gay population. Still, the recognition of the gap in the literature might be the first step to more comprehensive research. Although I am sure the next edition of *The Handbook* will be more inclusive, I do want to point out that some chapters did include a truly multicultural overview, and examined socioeconomic status in rewarding detail. I also enjoyed the attention paid to immigrant women.

The chapters in *Part I—Historical, Theoretical, and Methodological Issues* are largely successful. They use a pedagogical approach that informs the reader and exhorts the researcher to make conscious choices about methodology. In Chapter 1 (*Women as Subjects, Actors, and Agents in the History of Psychology*, Unger), readers are introduced to relevant history; I would argue that this is quite important for a selectively amnesiac discipline like mainstream psychology, which tends to depoliticize its past and avoid conscious acknowledgment of its biases. In a delightfully clear Chapter 2 (*Theoretical Perspectives on Women and Gender*, Wilkinson), the reader is led through various feminist theoretical treatments of one research example, making what could be a “dreary theory” chapter immediately accessible for a wide audience. In Chapter 3 (*Choices and Consequences: Methodological Issues in the Study of Gender*, Rabinowitz and Martin), I enjoyed reading a balanced view of Gilligan’s work, which I would argue is generally missing from many other treatments. That researchers are more powerful than participants was an important insight, and one probably few of us outside of clinical practice choose to acknowledge and/or address. In Chapter 4 (*Women, Psychology, and Evolution*), Gowaty provides perhaps too much argument against some of evolutionary psychology’s practitioners; a broader coverage of the literature would have made her arguments more convincing. Some of her explications of major concepts (e.g., female mate choice) would likely be overly difficult to those without background knowledge. In Chapter 5 (*Gender Similarities and Differences as Feminist Contradictions*, Kimball), possibly the most important question for us feminists doing related research was addressed: Should feminists study sex/gender differences? Kimball provided a thorough and balanced exploration of both sides of the yes/no debate.

Part II—Developmental Issues had some successful and unsuccessful chapters. Chapter 7 (*Biological Influences on Psychosexual Differentiation*, Zucker) covers the literature on prenatal hormones and related clinical

conditions, in what may have been a purposively dispassionate review of what many see as a contentious area. My own research is in behavioral neuroendocrinology, and I would have liked to read how feminists are interpreting and interacting with such research, i.e., more contextualization within the larger sphere of psychology of women and gender. Others, to whom this research is new, will likely find it clearly written and informative. Chapters 8 (*From Infancy through Middle Childhood: The Role of Cognitive and Social Factors Becoming Gendered*, Powlishta, Sen, Serbin, Poulin-Dubois, and Eichstedt) and 10 (*Current Perspectives on Women's Adult Roles: Work, Family, and Life*, Gilbert and Rader) provided excellent reviews of the literature and, unlike some chapters where content may have been more a reflection of the particular authors' interest, I felt these were comprehensive—and possibly even encyclopedic—in scope. Reading Chapter 11 (*Motherhood and Mothering*, Woollett and Marshall), I found myself questioning whether a continued singular focus on mothering, as opposed to parenting and/or fathering, inadvertently works to locate childcare solely as women's responsibility. I was disappointed to find no mention of *Mother Nature* by Hrdy, a summation of work which has truly revolutionized conceptions of maternal behaviour, and there was no reference to Fleming's or Wynne-Edwards's labs, all of whom have shed new light on parenting. Indeed, I found this chapter largely disappointing, as it had little research content or theoretical comment. For example, pregnancy and childbirth as well as fathers received only one-half page each. Chapter 12 (*Older Adult Women: Issues, Resources, and Challenges*, Canetto) mainly focused on health, death, and suicide—grimmer matter than one would have expected from its title, but a thorough examination of these topics nonetheless.

Part III—Social Roles and Social Systems was strong, with a few weaker chapters. Chapter 13 (*The Psychology of Men and Masculinity: Research Status and Future Directions*, Good and Sherrod) was not as thought-provoking as I hoped, and I would have thought that queer men definitely merited inclusion. This chapter is likely to be stronger in an updated edition as this area develops. Chapter 15 (*Gender and Language*, Crawford) was a must-read standout, and I cannot express my utmost confidence (and delight!) that Crawford could convince just about anyone of the case for non-sexist language and feminist involvement in science, academia, and everyday life. When Crawford states "Many of the 'ridiculous' suggestions of feminists have now become part of everyday usage" (p. 240), I thought *Exactly!* and wanted to do a jig around the room. This chapter was full of insightful interpretations and syntheses of the literature. As I am

often faced by the denial of others to acknowledge that the use of "man" does not include "woman," I was pleased to read an empirical and concise treatment of exactly that. And though Crawford's review is inspiring because the reader can see how society has moved away from sexist language in some cases, it also provokes. In Chapter 17 (*Gender and Relationships*), Dion and Dion pointed out how easy it is for individuals to pretend they are members of the opposite sex on the internet. This struck me as a truly challenging and stimulating insight. What does it mean for the entire content of *The Handbook*? Though an engaging and multicultural chapter, I would have expected a more attention on nonstraight relationships. Chapter 18 (*Sexualities*, Kitzinger) was a strong chapter, and I particularly enjoyed her discussion of essentialism and social constructivism. She notes that women are not always inclusive, and the struggle for women's and/or LGBT rights have often been perceived to be in conflict. However, I would have liked to see more discussion of transgendered individuals, and a recognition of the heterogeneity of lesbians.

Part IV—Gender and Physical and Mental Health was largely aimed at clinicians. The chapters in this part articulated what feminist clinical practice is, how some feminist clinicians practice, and the strengths and weaknesses of feminist practice. Clinicians who are not involved in feminist practice would benefit from understanding what their colleagues are doing. In Chapter 22 (*Sociocultural Issues in Counseling for Women of Color*), Wyche details three progressive stages in clinicians' approach to women of color: (1) deny cultural differences; (2) recognize cultural differences but deny they are important; (3) include cultural sensitivity in one's practice. This struck me as eminently applicable to researchers as well as clinicians.

Part V—Institutions, Gender, and Power offered a more legalistic treatment. Chapters 23 (*A Developmental Examination of Violence against Girls and Women*, White, Donat, and Boudurant) and 25 (*Sexual Harassment*, Gutek and Done) used a gendered analysis that was more successful in the latter chapter. That chapter contained an excellent discussion of the origins of harassment, and I found it noteworthy that psychological studies generally do not define harassment in a legal way. Gutek and Done also provided an interesting treatment of sexual harassment of men; it is generally perpetrated by men and tends to involve issues of sexual orientation. Chapter 26 (*Women, Gender, and the Law: Toward a Feminist Rethinking of Responsibility*, Fine and Carney) used case studies effectively to make the reader question how the law is differentially applied to women and men. For example, when children are abused by their fathers or mother's

partner, women may be charged with failure to protect—a charge which is rarely applied to men. Obviously, this has implications for what society defines as mothers', but not men's, responsibilities. The last chapter (*Changing Society, Changing Women (and Men)*, Cole, Zucker, and Duncan) examined how political beliefs are transmitted, like feminism from feminist parents to children who do not always subscribe to their parent's ideals. In Part V, I would have liked to read about feminist analyses of legal cases surrounding the right to work and appearance/youth, divorce, pregnancy/maternity/paternity/parental leaves, or paternity support. But I realized that in-depth treatments of the literature can preclude comprehensive coverage.

The Handbook explores the latest theory and practice in the psychology of women and gender, though it lacks a comprehensive coverage of biopsychological research. I would argue that a focus on gender (and not just women or women and gender) would make some theoretical standpoints more comprehensive. And, as I mentioned earlier, the book would benefit from a much larger exploration of LGBT research. Race/ethnicity and socioeconomic statuses were afforded differing degrees of attention in various chapters, but mainly *The Handbook* felt like a review of White heterosexual privileged women. I eagerly anticipate a second edition, in which these weaknesses can be rectified, because the majority of chapters were strong, thorough, and insightful.

As a researcher who is a feminist, I often worry about how my work will be construed in the absence of my critical interpretation, whether my work is actually detrimental to women in some way I cannot predict, or whether my quantitative biopsychological empirical approach will make me an outcast in feminist circles (if I ever find them). I wonder if other feminist researchers feel this same way. If so, they will be as comforted as I by Kimball's assertion, "We do not have to be perfect researchers, nor search for the perfect study of political strategy. We can begin where there is meaning for us, proceed by examining the strength and limitations of where we begin and compare our work with that of others in nonhierarchical ways" (p. 82).

Sexual Appetite, Desire and Motivation: Energetics of the Sexual System. Edited by Walter Everaerd, Ellen Laan, and Stephanie Both. Royal Netherlands Academy of Arts and Sciences, Amsterdam, 2001, 146 pp., Euro 36.00.

Reviewed by Anders Ågmo, Ph.D.³

Sex behavior in nonhuman animals has been experimentally studied for more than 200 years. Our understanding of the endocrine and neural bases for this behavior has seen tremendous progress. Even the molecular mechanisms involved in the activation of sexual behavior by gonadal hormones are beginning to be uncovered. The role of early experience, both with regard to exposure to sex hormones and with regard to social environment, has been the subject of intensive study as well. The list of achievements in the field of nonhuman sexual behavior could be made much longer, but the preceding examples should be sufficient for illustration. Despite the substantial amount of knowledge accumulated over the years, results from animal sex research have only occasionally been applied to the human.

Research on human sexual behavior has a short history. It is doubtful whether any scientifically sound behavioral research had been performed on human sexuality before Kinsey. Furthermore, Kinsey's landmark studies were in no way experimental. Even today, there are only a handful of experimental studies of sex behavior in the human. It seems that the huge increase in the number of descriptive studies of human sexuality observed during the last 55 years has not been accompanied by a similar increase in experimental, or at least well controlled, laboratory studies.

We are forced to conclude that there is substantial scientifically sound knowledge of sexual behavior and its endocrine and neural regulation in nonhuman animals, although the available information on these phenomena in the human is much more limited. This edited volume must be seen against this background. It consists of a collection of papers emanating from a colloquium held in Amsterdam in the Spring of 1998. The purpose of the colloquium was to integrate contributions from different disciplines to our understanding of, presumably, human sexual behavior and the application of this knowledge to social problems. This is a most noble and timely purpose, and the organizers of the colloquium, the participants, and the publishers should be congratulated for their respective contributions to this endeavor. The result is an exciting series of papers that are of great interest to all those pursuing a deeper understanding of human sexual behavior. As with any ambitious enterprise, shortcomings are inevitable, but in general the reading of this collection of papers is the most enjoyable intellectual experience.

The first chapter deals with the neural control of the lordosis posture in hamsters and cats, basically from a neuroanatomical perspective. Although the research summarized in the chapter is a beautiful example of the neurobiological approach to behavioral phenomena, it represents the kind of knowledge that is little applicable

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to the human. The lordosis posture is certainly of fundamental importance in rodents and some other mammals, but it does not seem to be a distinctive feature of sexual behavior in women. Arching of the back and lifting of the tail is certainly not a prerequisite for sex in most women. It is doubtful whether it is in any woman. Therefore, it is not easy to understand how knowledge of the circuitry of the lordosis reflex could contribute to the understanding of human sex behavior. This chapter appears rather peripheral to the purpose of the book as stated in the introduction.

In the second chapter, Herbert tries to convince us that sexual behavior can be seen as a homeostatic activity. In support of this argument, he makes parallels to the regulation of water intake and sodium appetite. The hypothalamus detects osmotic imbalances and activates behavior to take corrective actions. So should rising levels of gonadal steroids lead to deficit signals, which in turn somehow lead to sexual interest and eventually to sexual behavior? A series of extremely convoluted and partly unrelated arguments about the limbic system, social context, and peptides then contribute to enhance confusion. It is not evident how rising concentrations of gonadal hormones should signal deficit, and it is still less evident how sexual activity could reduce such a hypothetical deficit. It so happens that sexual activity in many species leads to enhanced release of gonadal steroids. Therefore, the "homeostatic" activity of sex in response to rising levels of these steroids should make them rise still more, something incompatible with any idea of homeostasis. Nevertheless, the chapter is provocative and might constitute a basis for some after-dinner discussions.

The only chapter in the "neurobiological" part of the book really relevant to the human condition is about the role of estrogens in primates. However, this chapter has already been published in another recent book (Wallen & Schneider, 2000), and I see no need to comment upon it. The rest of the present book is dedicated to the human. We learn that the model of human sexual behavior by Masters and Johnson needs substantial modifications in an excellent chapter by Levin. In a following chapter, we are presented a draft of a model of human sexual motivation as well as a summary of a couple of studies of genital and psychic sexual arousal. Informative and well worth reading.

The most original and thought-provoking contribution in the present book is also the shortest, only 6 pages. It is a kind of summary of a book (Tennov, 1979) published long ago, but little read and cited in the scientific literature. The subject is *limerence*, a term invented by the author and referring to a kind of emotional state activated by the

presence of a potential mate, or in the language of the preceding chapter, a suitable sexual incentive. It appears to be one of the most illuminating and useful concepts ever invented to account for the intricacies of human sexual motivation. It offers an account of the conditions under which it is activated and analyzes the conditions necessary for its persistence. One main advantage of the concept is that it applies to everyday situations rather than to the highly artificial context of the laboratory. Therefore, it may have considerable ecological validity. Although the concept of limerence was created more than 30 years ago, it fits very nicely with the most recent advances in incentive motivation theory applied to sexual behavior. Most, if not all, of these advances stem from nonhuman animal research. Thus, unintentionally the limerence concept offers a unique opportunity to integrate nonhuman and human sexual motivation theory. Furthermore, it provides a solid basis for studies of human sexual motivation as it is experienced by most individuals, that is something consisting of a subtle interplay between two individuals where the behavior of one may be a determinant of the behavior of the other.

Following the splendid discussion of limerence, we find a chapter dedicated to a discussion of sexual desire and its measurement. Here, sexual desire is treated almost like a personality trait, that is, something stable over time and over situations. This is probably not unreasonable, if desire is understood as arousability of sexual motivation rather than the momentaneous intensity of motivation. The former may well be a stable individual characteristic whereas the latter probably is situation dependent. Although this distinction is missing from the chapter, it discusses the important problem of measurement in an interesting and informative way.

The last chapter discusses sexual offenders. In fact, it is a kind of advertisement for a treatment program, including the salesman's classical argument on how much you can save by buying it. As such, it has no place in a scientific context.

What can we learn from this book? The editors provide an answer in the epilogue: "Motivation, appetite and desire in animals are derived from behavioral indicators. However, desire in humans is an experience, which can be communicated mainly through verbal report." Implicit in this statement is the notion that actual behavioral data are much easier to interpret than other kinds of data. This is not self-evident, though. Most researchers would accept that the difficulties associated with inferences from behavior to underlying psychological states, like motivation, are considerable. There is, indeed, an intense discussion within the animal behavior community concerning appropriate ways to relate behavioral indicators

to the concept of sexual motivation. In fact, it is not evident that animal studies have elucidated more problems of sexual motivation or desire than human studies have. The main differences in our understanding of sexual phenomena between nonhumans and humans are probably limited to some very basic aspects of sexual reflexes, like the lordosis in females of some species. A careful reading of the book will nicely illustrate this.

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Promiscuity: A Natural History of Sperm Competition and Female Choice. By *Tim Birkhead*. Harvard University Press, Cambridge, Massachusetts, 2000, 272 pp., \$16.95.

*Reviewed by Dietrich Klusmann, Dr. phil.*⁴

Sexual reproduction could be easier and more straightforward if it were not for sexual conflict either between or within the sexes. There are basically two sexual conflicts: first, the female organism wants to choose, but the male organism does not want the female to have the choice; second, males compete with each other, which may also have damaging side effects for females. To be precise, it should be “the sex with the larger parental investment” instead of females and “the sex with the smaller parental investment” instead of males. In fact, the conflicts between the sexes are reversed when males shoulder the larger part of parental care, as in the seahorse and a few other species, where females compete for access to males because males are the limiting resources.

In this volume, Birkhead describes the vicissitudes of sexual conflict. Much of the text is devoted to sperm competition, but the most intriguing part is the section about polyandry. Female polyandry is adaptive for a wide range of reasons, but even as observations of female animals seeking copulation with many males can easily be made, and in fact have been made for centuries, the phenomenon was fully appreciated only recently. In Darwin’s days, the predominant view was like this: Because fertilization can only be achieved once per

pregnancy, it would be pointless for a female to copulate more than a few times. Darwin himself was led to a different view by some of his observations, especially by his study of barnacles, but did not work it out, perhaps because his idea of sexual selection had already been met with such resistance, and female promiscuity would have estranged his Victorian contemporaries even more. Birkhead also offers another explanation: Darwin’s daughter, Henrietta, who was an indispensable aid for the editing of his manuscripts, was already strained by what she had to write and Darwin did not wish to stress her any further.

The view of the female as generally being coy and the male as being fickle dominated until only some decades ago. Even the discovery of sperm competition in the 1960s did not change this at first. Only gradually did the ubiquity of female polyandry become apparent. So why should females copulate more than a few times? Why must a female chimpanzee copulate about 1,500 times to achieve just one pregnancy? Insurance of fertilization cannot be the problem, because a biological mechanism to ensure fertilization with a few copulations did evolve in many species. Are females simply succumbing to male pressure? In most species, females are well able to discourage amorous males simply by turning away; only in few species, such as mallard ducks, can successful male harassment and rape be observed. In addition, copulation imposes at least opportunity costs and often also the risk of predation and sexually transmitted disease. The search for sexual pleasure cannot be part of the explanation because it should be part of the motivational mechanism that has to be explained in the first place. So what are good reasons for females not to be coy? Astonishingly, there are many, but not all of them are well established by research results, and they may be different for different species.

In many species, females are found to have more viable offspring when inseminated by more than one male. The reasons are not fully understood; potential explanations include the avoidance of incest depression, the benefits of selecting a male with good genes and especially of new genetic combinations conferring disease resistance. In addition, females in some (or many?) species are capable of what is called cryptic female choice, the post hoc selection of sperm after copulation has occurred, sometimes even of stored sperm from past copulations with different males. Female choice is guided by signals of genetic quality, which might be assessed by the appearance of ornaments like colorful plumage, antlers, songs, and dances. In monogamic avian species, a female double-strategy to obtain the best of two worlds can be observed: She copulates freely with the male who helps to build the nest, but after having laid the first

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egg she grows reluctant and seeks what biologists call “extra pair copulation” with males of adjacent territories, preferably males of high status. There may be additional benefits for polyandry, which differ from species to species: safeguarding against infanticide by blurring the issue of fatherhood or attaining direct benefits, such as gifts and spermatophores that can be eaten. Yet, another benefit would be sexual selection for competitive sperm: the female lets the sperm of different males fight it out within her reproductive tract and the male whose sperm beats out those of his rivals will father sons with a better prospect of succeeding in future such competitions. In turn, this will also help to promote their mother’s genes. In species with male parental care, the female’s willingness to engage in repeated copulation helps the male in the pursuit of his mate-guarding concerns. Therefore, it might have evolved as the result of a male preference for female sexual responsiveness, which was beneficial to the male because it raised the probability of his fatherhood.

Birkhead obviously enjoys relating to us the many complications of sexual conflict in the animal kingdom, and this passion is fully transferred to the reader. He achieves this with a fine brand of British style irony and civilized wit that will induce an amused smile every once in a while, and he writes in an effective and lively prose. An example,

A couple of weeks after her final moult the female mantis is ready to copulate. She signals her readiness by releasing a pheromone and on catching a whiff of this a male will fly upwind until he locates her. However, he does not come winging in to alight beside her: this is far too dangerous. Instead, he usually alights about thirty or forty centimetres away. Both sexes have big eyes and excellent vision so the male waits until he can see the female. He then stalks her—extremely carefully. His behaviour is remarkable: if she turns to look in his direction he freezes; when she turns away he moves forward. If there’s a breeze, he edges forward using the movement of the fluttering vegetation to disguise his progress. Once he is within ten or twenty centimetres of the female he waits. He composes himself and when the female is looking elsewhere, he leaps on to her back in a single adroit movement. If he does it right, he’s safe. But if he misjudges his timing he ends up in her prickly embrace. Let’s assume our male got it right. Grasping the female and lying longitudinally along the female’s back, the male’s prehensile abdomen tip starts to seek out hers, and copulation takes place. After copulating for about two hours the male either jumps or flies off the female’s back as quickly as you can imagine. Again, if he messes this up, he’s dead, but usually what happens is that he springs away from the female and hits the ground running. He does not want to be dinner. (pp. 211–212)

Every new topic begins with a review of ancient views, which were often unsubstantiated, such as the

interpretation of the hyena’s laugh as reflecting its mischievous delight in being able to change sex. Sometimes, however, these ancient beliefs are astonishingly correct, like Aristotle’s observation of last male precedence in the insemination of birds. The section on sperm starts with an historical recollection of events. Who discovered spermatozoa under the microscope for the first time? Anton Leeuwenhoek (1632–1723). Whose sperm was it? It was Leeuwenhoek’s own sperm, so the question arises how he got it. This was controversial stuff and not to be burdened with additional scandal. In a letter to the Royal Society, Leeuwenhoek wrote, “What I investigate is only what, without sinfully defiling myself, remains as a residue after conjugal coitus.”

The strong point of evolutionary theory is explanation. Darwin once said in a letter to a friend, “All observation must be for or against something if it is to be of any service.” Much of Birkhead’s book is written in this spirit. He never wilfully parades interesting observations just for the thrill of it—they always serve a theoretical purpose. Explanation is processed in a systematic way: improbable alternatives are eliminated in advance and the remaining ideas discussed in turn. Thus, he always stays on top of the potentially confusing complexity generated by reproductive arms races. And he always leaves the reader with a most probable account or a clear definition of open questions.

Evolutionary biology and for that matter evolutionary psychology are blessed by a large number of good writers for the public (e.g., Richard Dawkins, John Maynard Smith, E. O. Wilson, Steve Pinker, and Geoffrey Miller to name only a few). Birkhead leans more to the sober style of John Maynard Smith, mixed a bit with the gift for tension, vividness, and commonsensical wit of Richard Dawkins. Even as this book is highly entertaining, it securely keeps to the rules of scientific report and argumentation. When Birkhead uses intentional language (which Richard Dawkins has termed “teleological shorthand”), he does so with great care to avoid misunderstanding. The “as if” character of, for example, the “interest of the female,” is noted every once in a while. Yet, he often manages to avoid intentional language altogether without allowing his language to become cumbersome, and without using more precise but less understandable short-hands like “is selected for.”

As a former undergraduate student of Robin Baker, Birkhead also gives a personal account of the fascination and the failure of this pioneer in the field of human sperm competition. Baker seems to have bent facts to fit his fantasy about human sexuality. Many of his assertions did not withstand scrutiny and on top of this he succumbed to the seduction of feeding sensational stuff to the media.

Unfortunately, some useful ideas lay buried in the work of Baker and Bellis and will have difficulty surviving because of the rightful discrediting of so many other claims.

Darwinian thinking is not fully grasped with abstract principles. It is only when a multitude of examples are studied that a full understanding occurs, and for this purpose the strangest examples, often provided by sperm competition and mating strategy, work best. A common stock phrase of book-praise is that this book will change fundamentally the way you think about the topic. Grasping the inner workings of sexual conflict does exactly this. It is an exercise of what William James pointed at in his famous lines, "It takes . . . a mind debauched by learning to carry the process of making the natural seem strange so far as to ask for the why of any instinctive human act." In fact, even as human sexuality is only treated *en passant*, after reading this book the world of human sexual motivation, otherwise taken for granted, looks strange, whereas at the same time becoming more intelligible and yet also more filled with questions.

The Selected Papers of Margaret Sander. Vol. 1: The Woman Rebel, 1900–1928. Edited by Esther Katz. University of Illinois Press, Urbana, Illinois, 2003, 512 pp., \$65.00.

Reviewed by Vern L. Bullough, Ph.D., D.Sci., R.N.⁵

This is the first volume of a multivolume edition of archival material on Margaret Sander, the recognized founder and leader of the birth control movement in the United States (a term which she and her friends coined in 1914). She was also a leader in globalizing birth control through her part in organizing international conferences and cultivating contacts among scientists, economists, social reformers, and population leaders around the world. Interestingly, her international work was kept independent of her leadership of the American movement. She continued to be the dominant figure in that movement (not without some battles with others) until her death in 1966 and remained an international icon. It was through her initiative in the 1950s that money was raised for the successful efforts of Gregory Pincus and his team to find an oral contraceptive pill.

The records about Sander and by her are voluminous. Katz, the editor of this volume, heads a project at New York University to gather the sources together, annotate them, and eventually publish them in succeeding volumes, no easy task because she reports that there is an archive of

over 120,000 letters, speeches, diaries, pamphlets, booklets, and organizational and legal records documenting her long and eventful life. Because the sources are scattered in many libraries and private collections, searching them out itself requires major detective work by a large number of students, researchers, librarians, archivists, and others working to bring everything together. Because Sander knew everyone in the world associated directly with sexual reform or research and, for a time, was very active in radical politics, her range of correspondents was enormous, ranging from sexologists such as Havelock Ellis, to birth control pioneers such as Marie Stopes, to the communist Emma Goldman, the labor union organizer, Big Bill Haywood, the philanthropist, John D. Rockefeller Jr., and writers and intellectuals such as H. G. Wells and George Bernard Shaw. Few individuals, outside of kings or presidents in history, have had their lives as intensely researched as this project will do for Sander. When completed, it will be a must source for researchers trying to find information about sexual practices in the first half of the twentieth century.

Though Sander wrote two autobiographies, these were in part conceived by her as propaganda tools, and were sanitized to remove the complexities, nuances, and contradictions which show up in her papers. What appears in this first volume, which covers her life from 1900 to 1928, is a woman constantly discovering new things about herself. Though her father was an atheist and socialist, her mother was a devoted Catholic who died of tuberculosis and the burden of having 11 children and numerous miscarriages. Sander attended a parochial elementary school but then with the help of 2 of her older sisters she went to a private boarding school and then nursing school, which she left after two years to marry William Sander. The couple was active in socialist and left wing causes, although it was only gradually that Margaret became more outspoken. Both later became active in the IWW (the International Workers of the World). William Sander, who had earned a good living as draftsman after 8 years of marriage, decided he wanted to become an artist and to help out financially as he cut back on his work, Margaret returned to work as a part-time nurse. It was here that she encountered the desperately poor women recovering from multiple pregnancies or unhygienic abortions that led her to become interested in birth control and sexuality, and found the cause that dominated the rest of her life.

During the period covered in this volume, Sander began her travels to spread the message of birth control throughout much of the world, but it also records her experience on picket lines with striking textile workers, her stays as a house guest at many lavish English country

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estates, the time she spent in jail, her first national lecture tour, and her establishment of the nation's most successful birth control organization.

This collection is mainly of letters she sent or articles or pamphlets she wrote and some diary entries. Letters of response to her are also included where the originals of her own are lost. Occasionally, the editor adds brief narrative snippets about what was going on in her life when the correspondence is not always clear. There is an attempt by the editor to identify every individual mentioned in a letter or elsewhere. Sometimes in her later writings, Sander herself censored some of her earlier statements

and such changes are marked and noted. There are still other documents and letters dealing with this period that will be covered in later volumes.

This volume, however, marks the first publication of what is a major project which should be in libraries everywhere. It is scholarship at its highest level and when complete will be a standard work of reference for anyone interested in the development of birth control or the history of sex education not only in the United States but also in the rest of the world. It will also record the life of one of the most influential woman of the twentieth century.

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