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Law and the Biology of Rape: Reflections on Transitions

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[S]tatistics about the incidence of rape are bewildering and diverse.¹

[R]ape law is still a mess.²

INTRODUCTION

The seriousness of the problem of violence against women no longer needs an introductory string of statistics to establish. Rape, in particular, since at least Brownmiller and Russell,³ has justifiably emerged as the subject of both important scholarship and significant efforts to reduce its

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1. Susan Stefan, *The Protection Racket: Rape Trauma Syndrome, Psychiatric Labeling, and Law*, 88 NW. U.L. REV. 1271, 1278 (1994).

2. Donald A. Dripps, *Beyond Rape: An Essay on the Difference Between the Presence of Force and the Absence of Consent*, 92 COLUM. L. REV. 1780, 1796 (1992).

3. SUSAN BROWNMILLER, *AGAINST OUR WILL: MEN, WOMEN AND RAPE* (1975); DIANA E.H. RUSSELL, *THE POLITICS OF RAPE: THE VICTIM'S PERSPECTIVE* (1975).

incidence.⁴ By any measure, and largely through the influence of feminist writers, we now recognize that coercive copulation, and the fear of coercive copulation, impose limits on female autonomy unacceptable in a civilized society.

The study of rape, to date, has largely reflected the disciplinary divisions popular within universities. There are psychiatric perspectives, sociological perspectives, women's studies perspectives, and biological perspectives, among others. Although each offers something, it is not uncommon to see the claim or assumption that one offers everything.

Legal thinkers, charged with actually doing something to prevent rape, consequently face a bewildering number of seemingly competitive claims, statistics, arguments, and assertions. Typically, only one of these theories at a time procures most-favored-theory status, and has its views of the matter embodied in laws and legal processes. Yet it is entirely unclear that any single perspective will, in the end, provide law with sufficient leverage against rape. For we have no reason to believe that the phenomenon of rape respects the artificial distinctions in knowledge that university department structures happen to reflect. And our progress in preventing rape has been, while somewhat positive, far more modest than we would prefer.⁵ This recommends that the search for a more effective

4. See, e.g., MARGARET T. GORDON & STEPHANIE RIGER, *THE FEMALE FEAR* (1989); DEBORAH L. RHODE, *JUSTICE AND GENDER* 244-53 (1989); SUSAN ESTRICH, *REAL RAPE* (1987); CASSIA SPOHN & JULIE HORNEY, *RAPE LAW REFORM: A GRASSROOTS REVOLUTION AND ITS IMPACT* (1992); Morrison Torrey, *Feminist Legal Scholarship on Rape: A Maturing Look at One Form of Violence Against Women*, 2 WM. & MARY J. WOMEN & L. 35 (1995); Katharine K. Baker, *Once A Rapist? Motivational Evidence and Relevancy in Rape Law*, 110 HARV. L. REV. 563 (1997); Katharine K. Baker, *Sex, Rape, and Shame*, 79 B.U. L. REV. 663 (1999); Katharine K. Baker, *Biology for Feminists*, 75 CHI.-KENT L. REV. (forthcoming 2000); STEPHEN J. SCHULHOFER, *UNWANTED SEX: THE CULTURE OF INTIMIDATION AND THE FAILURE OF LAW* (1998); Donald A. Dripps, *Beyond Rape: An Essay on the Difference Between the Presence of Force and the Absence of Consent*, 92 COLUM. L. REV. 1780, 1781 (1992); David P. Bryden & Sonja Lengnick, *Rape in the Criminal Justice System*, 87 J. CRIM. L. & CRIMINOLOGY 1194 (1997); Ellen M. Bublick, *Citizen No-Duty Rules: Rape Victims and Comparative Fault*, 99 COLUM. L. REV. 1413 (1999); JULIE A. ALLISON & LAWRENCE S. WRIGHTSMAN, *RAPE: THE MISUNDERSTOOD CRIME* (1993); A MOST DETESTABLE CRIME: NEW PHILOSOPHICAL ESSAYS ON RAPE (Keith Burgess-Jackson ed., 1999). For an overview of some of the social science research on rape, see Barty Burkhart & Mary Ellen Fromuth, *Individual Psychological and Social Psychological Understandings of Sexual Coercion*, in *SEXUAL COERCION* 75 (E. Grauerholz & M.A. Koralewski eds., 1991).

5. Researchers have generally concluded that, with rare exceptions, legal reforms have not significantly increased either rape reporting or the probabilities of arrests and convictions for rape. See, e.g., Ronet Bachman & Raymond Paternoster, *A Contemporary Look at the Effects of Rape Law Reform: How Far Have We Really Come?* 84 J. CRIM. L. & CRIMINOLOGY 554, 573 (1993); Julie Horney & Cassia Spohn, *Rape Law Reform and Instrumental Change in Six Urban Jurisdictions*, 25 L. & SOC'Y REV. 117, 149-50 (1991); Carol Bohmer, *Acquaintance Rape and the Law*, in *ACQUAINTANCE RAPE: THE HIDDEN CRIME* 317, 326-27 (Andrea Parrot & Lauri Bechhofer eds., 1991) David P. Bryden & Sonja Lengnick, *Rape in the Criminal Justice System*, 87 J. CRIM. L. & CRIMINOLOGY 1194, 1283-94 (1997).

understanding of rape continue.

It seems increasingly likely that future advances in rape prevention will require more concerted efforts to integrate knowledge across disciplinary boundaries. Some such efforts are underway. They are complicated, however, not only by latent turfism within different corners of the academy, but also by the growing disjunction between them in vocabulary, methodology, and general orientation.

Law, which tends to be more a synthesizer than a generator of knowledge, is in many ways well suited to help foster interdisciplinary communication. Since the extent of law's ability to prevent rape is a function of its behavioral model of rape—that is, its understanding of what influences rape's incidence—it follows that the more accurate and comprehensive the behavioral model is, the better law can do its job.⁶ Consequently, all those interested in preventing rape have an interest in helping to construct a more integrated, and hopefully more robust, model of rape behavior.

In a prior article, I tried to assist that overall integrative endeavor by attempting to diminish the gap between the social science and the life science perspectives on rape.⁷ I undertook this for three reasons. First, I am persuaded that rape is a serious problem. Second, I am persuaded that the persistence of the historical gap between the social and life sciences in understanding behavior imposes serious costs on society that are measured, in part, in less successful prevention of undesirable behavior than might otherwise be the case. Third, I am persuaded that the biological literature on biobehavioral influences on sexual aggression has not received a full and fair hearing, and may, in the end, have something useful to contribute to law's efforts to prevent rape.

Space limitations prevent an adequate summary, here, of the basic principles of behavioral biology and the theories of how sexual aggression can be understood against the background of those principles. I have discussed these elsewhere at length, offering a guide to common but avoidable errors in evaluating them, and speculating on possible legal applications if those theories should, over time, prove robust.⁸ In this Article I offer supplemental observations, in furtherance of the general integrative enterprise. Specifically, I address why law's model of rape behavior is likely to incorporate insights from biobehavioral science in

6. I have explored the relationship between behavioral models and law in Owen D. Jones, *Law and Biology: Toward an Integrated Model of Human Behavior*, 8 J. CONTEMP. LEGAL ISSUES 167, 167-173 (1997), and Owen D. Jones, *On the Nature of Norms: Biology, Morality, and the Disruption of Order*, 98 MICH. L. REV. (forthcoming May 2000).

7. See Owen D. Jones, *Sex, Culture, and the Biology of Rape: Toward Explanation and Prevention*, 87 CAL. L. REV. 827 (1999) [hereinafter Jones, *Sex, Culture, and the Biology of Rape*]. For further views, of participants at an interdisciplinary *Colloquium on Biology and Sexual Aggression*, see Special Issues numbers 1 & 2 of 39 JURIMETRICS (1999-2000).

8. *Id.*

future years, and how the legal system might best prepare for a transition from the sequential installation of most-favored-theory to a synthetic approach that incorporates both life science and social science insights.

I have two main points. The first is that modern biology makes it abundantly clear that all behavior is a function of both genes and environment—each meaningless without the other. Consequently, it is no longer valid to speak of whether biology (the study of the interaction of genes and environment) influences rape, or any other human behavior for that matter. The issues, more accurately, address how it does so, and how, if at all, understanding how it does so may improve our ability to deter rape and to increase female bodily autonomy. The second point is that the transition to a behavioral model that supplements existing knowledge about rape with biobehavioral perspectives need not be as traumatic as commonly feared. No thoughtful thinker of any stripe, for example, suggests that the existence of biobehavioral influences on rape provides argument for excusing rape. And an informed and legally useful understanding of biological perspectives on rape (which are far different from what common caricatures portray⁹) can further our shared goal of reducing the incidence of rape. This requires, however, that the transition to a richer behavioral model is approached systematically. I propose such an approach below.

Part I briefly considers the threshold question: why consider biology at all? Part II proposes that the first step in transitioning to a more accurate and more useful model of rape behavior is to avoid a number of common definitional ambiguities that plague most rape discussions. Because those ambiguities are particularly likely to foster misunderstandings about biobehavioral perspectives, Part II also clarifies the scope of what biobehavioral theories address. Part III proposes that the commonly tangled realm of rape theory be divided into two distinct (though in some contexts overlapping) realms: one of theories about the meanings of rape, and the other of theories about the causes of rape. Part IV proposes that causes of rape, in turn, be sorted into two kinds, the precise and necessary inter-relationship of which can be understood in a way that provides important and continuing utility for the ongoing research in both social science and life science perspectives on sexual aggression. Part V offers thoughts on two complexities arising from the transition to an integrated model of rape behavior.

9. The vast bulk of recent newspaper, television, and radio commentary concerning theories of biobehavioral influences on sexual aggression reflects material misunderstandings about what the various theories do and do not say. A number of these misunderstandings are addressed in Jones, *Sex, Culture, and the Biology of Rape*, *supra* note 7, at 872-95.

I. WHY CONSIDER BIOLOGY AT ALL?

A. REASONS *NOT* TO CONSIDER BIOLOGY IN THE STUDY OF RAPE

At the risk of seeming to undercut my first point, that the study of biology is useful to understanding rape, I want to start by acknowledging some of the many reasons that have been or could be advanced for excluding biological perspectives. Specifically, there are at least seven reasons to reject the idea that there are biobehavioral influences on human sexual aggression.

First, anti-feminists have often appealed to biology as justification for repressive policies.¹⁰ It is therefore not wholly irrational to expect that—as biobehavioral knowledge is assimilated—some people will claim that rape is “the inevitable result of innate male aggression coupled with an uncontrollable sexual need.”¹¹ Annexation of biology by those with pre-existing political agendas could increase tensions, rather than reduce them, and thereby partially or completely offset possible gains in reducing the incidence of rape. Second, exploring the biology of rape behavior might shift the focus of social and legal concern from the victim to the perpetrator, de-emphasizing harmfulness¹² and suggesting that the victim somehow precipitated her attack.¹³ Third, the more ‘naturalized’ rape is, the more women may appear, to their ultimate detriment, to be the natural victims of rape.¹⁴ And the more this is so, the more difficult it may become

10. As Professor Deborah L. Rhode notes, in *JUSTICE AND GENDER* (1989), during the early years of the women’s movement, the ideology of the anti-feminists was rooted in “biology, the experience of evolution, and the will of the Creator.” *Id.* at 14.

11. SUE LEES, *RULING PASSIONS: SEXUAL VIOLENCE, REPUTATION AND THE LAW* 6 (1997) (criticizing such a view).

12. “[S]o long as rape is seen as an act of sexuality rather than aggression and hostility, it will continue to be interpreted as predominantly pleasurable to both parties rather than harmful to the victim.” SUZANNA ADLER, *RAPE ON TRIAL* 11 (1987), *cited in* LEES, *supra* note 11.

13. See JULIE A. ALLISON & LAWRENCE S. WRIGHTSMAN, *RAPE: THE MISUNDERSTOOD CRIME* 100 (1993) (“A person who believes that rapists are sexually motivated may or may not feel that a woman should be held responsible for preventing her own rape.”); NANCY A. MATTHEWS, *CONFRONTING RAPE: THE FEMINIST ANTI-RAPE MOVEMENT AND THE STATE* 14 (1994) (“In the effort to shift blame from victims of rape, activists emphasized the violence in rape and down-played the role of sexuality. . . . The [early 70s] anti-rape movement removed itself from such troubling questions by promoting the idea that ‘Rape is violence, not sex.’”).

14. As several commentators have noted, one advantage of defining rape in terms of power, control, and violence is that victims no longer appear to be the ‘natural’ victims of this particular crime. See, e.g., BEVERLY ALLEN, *RAPE WARFARE: THE HIDDEN GENOCIDE IN BOSNIA-HERZEGOVINA AND CROATIA* 90, 119 (1996).

This definition also removes rape from any realm of sex (biological naturalness) or sexuality (the powerful workings of desire, used in some cultures to defend rapists and to demonize victims). It thus diminishes the possibility that rape of female persons by male persons might be considered natural, something desired by the victim, something that happens when the perpetrator is swept off his feet. By clearly stating that rape is an abuse of

to consider rape a crime of violence, worthy of our most serious deterrence efforts.

Fourth, the theories of biobehavioral influence are technical and subtle, and people may be more likely to misunderstand, mis-cite, and misapply them than to get them right.¹⁵ Fifth, the larger the perceived sexual component to rape, the harder it may be to encourage society to focus on underlying systemic problems of male power and dominance.¹⁶ Sixth, the existence of biobehavioral influences may lead to claims that rapists are not meaningfully responsible for their behavior.¹⁷ Finally, excluding discussion of biology, and emphasizing the violent aspects of rape, has in prior contexts actually facilitated a number of positive changes in rape law.¹⁸

B. REASONS TO CONSIDER BIOLOGY IN THE STUDY OF RAPE

The concerns just articulated have substance. And I trust that other authors will continue to explore them, so that they may be carefully weighed against some of what follows below. For reasons that follow, however, it seems probable that in the end we can and should conclude that future gains in preventing rape will require attention to biobehavioral perspectives. Such attention need not (and in truth cannot and should not) categorically exclude attention to other perspectives. Although a full exploration of the relevance of biology to behavioral models, and of behavioral models to law, is beyond this work's scope, let me offer several observations nonetheless.

It is the confluence of at least five factors that recommends we consider biobehavioral perspectives on rape. The first is that law is about regulating behavior, and a firm grounding in biology is therefore necessary for any modern, accurate, contextualized, and nuanced understanding of behavior.

power and control, this definition forthrightly shows it to be a serious crime of violence.

Id.

15. For example, "[i]n some instances, courts have leapt from the fact of difference to the appropriateness of differential treatment without the benefit of intermediate premises. In other contexts, physiological distinctions have become cultural imperatives." RHODE, *supra* note 4, at 313-20.

16. For one view of this interaction, see, for example, ALLEN, *supra* note 14, at 118 ("clarif[ying] the dynamic of power and subjugation attendant to rape [makes] it difficult to think of rape as related in any way to sexual desire.").

17. In Texas, for example, one rape defendant charged with twenty-eight counts of rape claimed he was a victim of 'compulsive rape syndrome,' as a function of high testosterone levels. See CAROL TAVRIS, *THE MISMEASURE OF WOMAN* 152, 347 n.41 (1992) (citing research of William Wilbanks).

18. Substantive changes include, for example, the elimination of demonstrated nonconsent as an element of the offense. Procedural and evidentiary changes include, for example, shielding the victim's prior sexual history. See generally Julie Horney & Cassia Spohn, *supra* note 5; KEITH BURGESS-JACKSON, *RAPE: A PHILOSOPHICAL INVESTIGATION* 67-86 (1996).

Biobehavioral perspectives on those law-relevant behaviors, such as rape, that have proved difficult for law to regulate may increase law's effectiveness. The second factor is the existence of forced copulation in many other species, recommending that we explore the possibility of similar origins (in common ancestors or in response to a history of similar environmental challenges)—just as we do when finding other cross-species similarities in anatomy, biochemistry, or behavior.

The third factor is that forced copulation in many other species parallels, in a number of precise and important ways, the patterns of forced copulation and resistance to forced copulations in humans. The fourth is that these patterns, in humans and other species, can be parsimoniously reconciled through the lens of modern behavioral biology, which offers plausible theoretical foundations that are both mutually consistent and consistent with other theories presently considered robust. The fifth is that several of the logic errors commentators often hope to avoid, in order to not over-interpret biobehavioral theories, have led, in turn, to the commission of symmetrical logic errors. This suggests that the biobehavioral theories may have been under-credited.

We explore these five factors in turn.

1. Law, Biology, and Human Behavior

Law is, fundamentally, about regulating human behavior. The better law's behavioral model—its theory of where behavior comes from—the better it can identify and anticipate causal relationships between various environmental conditions and various behavioral outcomes. And the better law's behavioral model, the better it can estimate how future changes in law can foster effective pursuit of law-relevant goals. Put another way: the more legal thinkers understand about the multiple origins of law-relevant behavior, the better they can design legal systems to regulate it.

Modern brain science has made this logic ever more compelling. It is elementary that most behavior originates in the brain. The brain, wherein whatever it is we like to call the mind resides, is an anatomical structure that processes information collected from the peripheral nerves. Consequently, like all anatomical structures, its current form and function necessarily reflect evolutionary processes, such as natural selection and sexual selection.¹⁹ The implications of this latter conclusion are only now

19. For brief overviews of natural and sexual selection written for a legal audience, see *Part I, A Primer in Law-Relevant Evolutionary Biology*, in Owen D. Jones, *Evolutionary Analysis in Law: An Introduction and Application to Child Abuse*, 75 N.C. L. REV. 1117 (1997); Jones, *Sex, Culture, and the Biology of Rape*, *supra* note 7, at 844-50; Timothy H. Goldsmith & Owen D. Jones, *Evolutionary Biology and Behavior: A Brief Overview and Some Important Concepts*, 39 JURIMETRICS 131 (1999). More detailed accounts appear in TIMOTHY H. GOLDSMITH, *THE BIOLOGICAL ROOTS OF HUMAN NATURE: FORGING LINKS BETWEEN EVOLUTION AND BEHAVIOR* 61-65 (1991); JOHN ALCOCK, *ANIMAL BEHAVIOR: AN EVOLUTIONARY APPROACH* (6th ed. 1998); DOUGLAS J. FUTUYMA, *EVOLUTIONARY BIOLOGY*

beginning to be understood and explored in the legal literature.

One implication is that the brain is a specialized, not a general, information processor. Peripheral nerves do not just carry stimuli to the brain and dump them on the floor. Different kinds of stimuli are processed by different parts of the brain, dedicated to different tasks.

Another implication is that this specialized information processor, this system of organs of computation, has been designed by natural and sexual selection to solve problems faced by our evolutionary ancestors. In other words, the brain is overwhelmingly likely to be better at solving certain kinds of problems than others and to yield states of the nervous system (commonly called emotions) that, on average, led to adaptive behavior for our ancestors, in the environments they faced for most of human evolutionary history.

This means that although individuals vary there are nonetheless certain species-typical (in some cases sex-typical) 'psychologies'—or information-processing patterns.²⁰ To the extent patterns of information processing tend to yield patterns of human behavior, a better understanding of human evolved psychology can assist law. This is comparatively less useful in the post-act context (such as a trial) because one can never know for certain why someone who behaved some way behaved as he or she did. But it is likely to be quite useful in the pre-act context, such as the development of society-wide policies for decreasing the likelihood of certain kinds of behaviors. The better law's model of human behavior, the more efficiently it may be able to shape environmental conditions to shift behavior in socially desirable ways.²¹

(2d ed. 1986); TIMOTHY H. GOLDSMITH & WILLIAM F. ZIMMERMAN, *BIOLOGY, EVOLUTION AND HUMAN NATURE* (forthcoming 2000); ROBERT TRIVERS, *SOCIAL EVOLUTION* (1985); J.R. KREBS & N.B. DAVIES, *AN INTRODUCTION TO BEHAVIOURAL ECOLOGY* (3d ed. 1993); MARK RIDLEY, *EVOLUTION* (1993); MARTIN DALY & MARGO WILSON, *SEX, EVOLUTION, AND BEHAVIOR* (2d ed. 1983); SCOTT FREEMAN & JON C. HERRON, *EVOLUTIONARY ANALYSIS* (1998); DAVID M. BUSS, *EVOLUTIONARY PSYCHOLOGY: THE NEW SCIENCE OF THE MIND* (1999).

20. Extending the term 'psychology' into the non-human context may at first appear to overstate the case. As the term is typically used in the animal behavior context, however, the 'psychology' of non-human animals refers not to cognitive processes or consciousness, but rather to the behavior-influencing patterns of information processing, performed in some relatively simple brain, that are typical of a species and that guide its members toward reproductively useful activities. Such species-typical psychologies are subject to evolutionary processes when differences between heritable psychological mechanisms yield differences in reproductive success of the organisms bearing them. Those psychological traits tending to increase their own replication into future generations tend to appear in larger and larger proportions of ensuing generations, until some extremely successful traits become shared throughout the entire population, or some subportion of it (such as males or females).

21. Just as meteorology is useful, notwithstanding its inability to predict the appearance or movement of a single cloud, behavioral biology can give us a window on behavior likely to emerge from somewhere, given certain environmental conditions, even if we cannot predict from whom. See David L. Faigman, *To Have and Have Not: Assessing the Value of*

2. Rape in Other Species

A second factor recommending the significance of biology to understanding rape is that forced copulation is by no means a uniquely human phenomenon. The behavior is widely documented, in both wild and laboratory conditions, in species ranging from our closest primate relatives (including orangutans, chimpanzees, and gorillas²²) to more distant primates, other mammals, birds, and insects.²³ Typically, the existence of common behaviors between humans and other creatures (such as sexual desire, care of offspring, and the like), just as the existence of common structures (opposable thumbs, four limbs, and the like), recommends the consideration of common origins. The presumption of common origins, easily rebutted with proper evidence, is consistent with a scientific approach and provides a useful starting point.

Of course, it is a point of some debate whether or not forced copulation in non-human species can properly be called 'rape.' For there are obviously many additional layers of meaning, beyond forced copulation alone, surrounding 'rape' in humans. The issue has been debated at some length elsewhere, and I will here use the term rape simply as a short synonym for forced copulation.²⁴

3. Parallel Rape Patterns Between Other Species and Humans

In addition to the mere fact that males of many species besides humans force copulations, it is significant that the patterns in which rape occurs in humans are often strikingly similar to the patterns of rape behavior in the other animal species in which rape occurs.²⁵

For example, just as forced copulations are non-randomly distributed in

Social Science to the Law as Science and Policy, 38 EMORY L.J. 1005, 1047 (1989) ("meteorology is [another] example of the value of even uncertain predictions.").

22. See generally RICHARD WRANGHAM & DALE PETERSON, *DEMONIC MALES: APES AND THE ORIGINS OF HUMAN VIOLENCE* 132-43 (1996).

23. See generally sources cited in Jones, *Sex, Culture, and the Biology of Rape*, *supra* note 7, at 936, Appendix A; and notes 104-12.

24. Craig Palmer reviews some of this debate in Craig T. Palmer, *Rape in Nonhuman Animal Species: Definitions, Evidence, and Implications*, 26 J. SEX RES. 355 (1989). For the view that 'rape' can refer to forced copulation in both humans and other animals, see, for example, Charles Crawford & Birute M. F. Galdikas, *Rape in Non-Human Animals: An Evolutionary Perspective*, 27 CAN. PSYCHOL. 215 (1986). Opposing views can be found in Daniel Q. Estep & Katherine E. M. Bruce, *The Concept of Rape in Non-Humans: A Critique*, 29 ANIMAL BEHAV. 1272 (1981); Donald F. J. Hilton, *Is It Really Rape or Forced Copulation?* 32 BIOSCI. 641 (1982); PHILIP KITCHER, *VAULTING AMBITION: SOCIOBIOLOGY AND THE QUEST FOR HUMAN NATURE* 184-89 (1985) and sources cited in RANDY THORNHILL & CRAIG J. PALMER, *A NATURAL HISTORY OF RAPE: BIOLOGICAL BASES OF SEXUAL COERCION* 120 (2000). (This latter title reflects a prepublication title change from the prior title, to which I referred in Jones, *Sex, Culture, and the Biology of Rape*, *supra* note 7: *WHY MEN RAPE, WHY WOMEN SUFFER: RAPE, EVOLUTION, AND THE SOCIAL SCIENCES*.) See also Jones, *Sex, Culture, and the Biology of Rape*, *supra* note 7, at n.85.

25. See generally, Jones, *Sex, Culture, and the Biology of Rape*, *supra* note 7 (surveying studies on rape patterns).

other species, and overwhelmingly concentrated on reproductive females,²⁶ the victims of human rapes appear to be overwhelmingly concentrated into those age groups in which females are likely to be reproductive.²⁷ Moreover, the patterns of psychological trauma in victimized females and females fearing rape appear to be sufficiently narrowly tailored, and so broadly consistent with patterns of rape avoidance in other species, that it suggests both that there are evolutionary origins to rape avoidance mechanisms and that forced copulation has long been a significant threat in human ancestry.²⁸ Although the details of the relevant evolved algorithm vary from species to species, as one would expect, the presence of forced copulation in so many species in addition to our own, including in species without what we think of as culture, society, or symbolic reasoning, suggests the possibility that similarly evolved psychological mechanisms contribute to observable patterns of sexual aggression in humans.

4. Theoretical Foundation for Bibehavioral Influences on Rape

In addition to the empirical evidence concerning rape in humans and non-humans, there is a quite plausible theoretical foundation, explored in numerous biological works, for the bibehavioral influences on sexual aggression that could explain those patterns. An evolutionary perspective on rape behavior, at the theoretical level, considers the extent to which evolved psychological adaptations are relevant to the incidence of rape.

26. See *id.* at 865-67 (discussing data).

27. See Randy Thornhill & Nancy Wilmsen Thornhill, *Human Rape: The Strengths of the Evolutionary Perspective*, in *PSYCHOLOGY AND SOCIOBIOLOGY: IDEAS, ISSUES, AND APPLICATIONS* (Crawford et al. eds., 1987); Randy Thornhill, *Is There Psychological Adaptation to Rape?*, 16 *ANALYSE & KRITIK* 68 (1994); Randy Thornhill & Nancy Wilmsen Thornhill, *The Evolutionary Psychology of Men's Coercive Sexuality*, 15 *BEHAV. & BRAIN SCI.* 363 (1992) (article followed by extensive peer commentary); Randy Thornhill & Nancy Wilmsen Thornhill, *Coercive Sexuality of Men: Is There Psychological Adaptation to Rape?*, in *SEXUAL COERCION* 91, 103 (Elizabeth Grauerholz & Mary A. Koralewski eds., 1991); Randy Thornhill et al., *The Biology of Rape*, in *RAPE* 102, 117-18 (S. Tomaselli & R. Porter eds., 1986).

28. See THORNHILL & PALMER, *supra* note 24; Randy Thornhill, *Rape-Victim Psychological Pain Revisited*, in *HUMAN NATURE* 239 (Laura Betzig ed., 1997); Nancy Wilmsen Thornhill, *Psychological Adaptation to Sexual Coercion in Victims and Offenders*, in *SEX, POWER, CONFLICT: EVOLUTIONARY AND FEMINIST PERSPECTIVES* 90 (David Buss & Neil M. Malamuth eds., 1996); Nancy Wilmsen Thornhill & Randy Thornhill, *An Evolutionary Analysis of Psychological Pain Following Human (Homo sapiens) Rape: IV. The Effect of the Nature of the Sexual Assault*, 105 *J. COMP. PSYCHOL.* 343 (1991); Nancy Wilmsen Thornhill & Randy Thornhill, *An Evolutionary Analysis of Psychological Pain Following Rape. III: Effects of Force and Violence*, 16 *AGGRESSIVE BEHAV.* 297 (1990); Nancy Wilmsen Thornhill & Randy Thornhill, *An Evolutionary Analysis of Psychological Pain Following Rape. II: Effects of Stranger, Friend, and Family-Member Offenders*, 11 *ETHOLOGY & SOCIOBIOLOGY* 177 (1990); Nancy Wilmsen Thornhill & Randy Thornhill, *An Evolutionary Analysis of Psychological Pain Following Rape. I: The Effects of Victim's Age and Marital Status*, 11 *ETHOLOGY & SOCIOBIOLOGY* 155 (1990); Randy Thornhill & Nancy Wilmsen Thornhill, *The Evolution of Psychological Pain*, in *SOCIOBIOLOGY AND THE SOCIAL SCIENCES* 73 (Robert W. Bell & Nancy J. Bell eds., 1989).

This may be either because there is an evolved male psychology tending to increase the probability of sexual coercion in response to various patterns of environmental stimuli (the 'adaptation' hypothesis), or because sexual coercion is an incidental effect of other psychological adaptations (the 'by-product' hypothesis).²⁹

There are two things of note. First, it is important to recognize that biological theories of human behavior are not simply genetic theories of human behavior. (Nor are they, of course, either normatively justifying or excusing.) Behavioral biology studies the intersection of genetic influences of behavior (through genetic influences on brain development and operation) with environmental influences on behavior (through environmental influences on brain development and operation). The specific relationship between genetic influences and environmental influences can be discerned in the light of evolutionary processes, particularly natural and sexual selection.

Second, behavior can be influenced by evolved psychologies in ways that are facultative (or, if one prefers, 'condition-dependent,' 'environmentally sensitive,' or 'context-specific'). A brief example will illustrate the importance of this principle.

a. The Power of Evolved Facultative Behavior

The male scorpionfly is a distinctive creature, looking something like a cross between a wasp and a scorpion. It's greatest distinction, however, is its behavior. Some of the males, on occasion, grab a female, attempt to immobilize her, and attempt to inseminate her by overpowering her struggles to depart uninseminated (which she nonetheless does roughly 60% of the time). Her lack of enthusiasm for copulation, in this context, is inferred from contrasting these encounters with the far more statistically frequent and routinely sperm-transferring kind of copulation, in which the female manifests no similarly uncooperative behavior.

Beneath this apparently sexually aggressive scenario lurks something even more intriguing. If a male scorpionfly can obtain and defend a dead insect, such as a grasshopper, it is often successful in attracting a willing sex partner. Females like to eat dead insects, and they are sexually attracted to a male that has one. If a male either cannot obtain a dead insect, or is relieved of his insect by a larger or more vigorous male, he will often attempt to create a suitably nutritious substitute: a small mound of his own saliva. Females apparently prefer dead insects, when they can get them, but a salivary mass is often an acceptable substitute.

Nonetheless, *some* males can offer neither insect nor salivary mound, either because they were unable to procure or produce an attractive one, or

29. See THORNHILL & PALMER, *supra* note 24. See also Randy Thornhill, *The Biology of Human Rape*, 39 JURIMETRICS 137 (1999); Jones, *Sex, Culture, and the Biology of Rape*, *supra* note 7, at 854-57.

because they were displaced by a stronger male who then courts females using those offerings as his own. It is typically the male unsuccessful in routine courtship that then attempts to force copulation with a female. Lacking insect or adequate substitute, he nonetheless carries, like all male scorpionflies, an anatomical clamp used to pin a struggling female's wing long enough for him to inseminate her—to force copulation. The clamp appears to have no other purpose. Disable the clamp, experimentally, and the male cannot succeed in copulating with a female.³⁰

b. From Insects to Humans, and Other Apparent Leaps of Logic

What if anything, could this mean? It would be foolish to overinterpret this. Humans are not insects. They have no special anatomical features used only in forced copulations. And plenty of rapists are not sexually desperate.³¹ Nevertheless, biologists maintain that there is something important to be learned from scorpionfly behavior about the evolutionary processes that can give rise to sexual aggression.

Specifically, the scorpionfly is living evidence that a conditional psychological algorithm, which increases the likelihood of sexual aggression in specific circumstances, can evolve by natural processes. For should a previously occupied salivary mass become available, a previously raping male will quickly switch strategies, claiming the mass, engaging in typical courtship behavior, and attempting to attract willing sex partners. Moreover, should a dead insect then become available, that same male will switch strategies once again, claiming the insect, engaging in typical courtship behavior, and attempting to attract willing sex partners.

What this means is that the difference between being a courtly scorpionfly and a raping scorpionfly is a function of the environmental conditions a single male scorpionfly may encounter. Put another way, rather than finding one predisposition to court females with insect food, one predisposition to court females with saliva, and one predisposition to force copulation—we find evidence of a single, constantly cycling conditional predisposition: “If in possession of dead insect, court; if no insect, spit and court; if no success, attempt rape; repeat.”

Unless male scorpionflies are uniformly learning this sequence of behavior from other scorpionflies, or independently deducing it—things that no one currently suggests—then every male bears this inherent, genetically influenced ‘psychology’ that predisposes him to one kind of behavior or another, *depending on circumstances*. This unequivocally

30. For discussion of these phenomena, see Randy Thornhill, *Rape in Panorpa Scorpionflies and a General Rape Hypothesis*, 28 ANIMAL BEHAV. 52 (1980). A useful summary of the experiment appears in JOHN ALCOCK, ANIMAL BEHAVIOR: AN EVOLUTIONARY PERSPECTIVE (5th ed. 1993), at 418-19.

31. Martin L. Lalumiere et al., *A Test of the Mate Deprivation Hypothesis of Sexual Coercion*, 17 ETHOLOGY & SOCIOBIOLOGY 299 (1996); L.E. Stermac & V.L. Quinsey, *Social Competence Among Rapists*, 8 BEHAV. ASSESSMENT 171 (1986).

demonstrates that even in simple, tiny brains, evolutionary processes can create relatively complex condition-dependent information processing patterns that narrowly tailor behavior to precise environmental conditions. The implication is that similarly context-specific algorithms could influence similar behaviors in humans—even while humans are subject to far more complicated combinations of cultural, learned, and other environmental variables. And biologists and psychologists increasingly maintain that this is plausible.

5. The Symmetry of Logic Errors

The fifth factor that, in combination with the others explored above suggests that biobehavioral theories of rape are worth studying, concerns the dangers of over-avoiding certain kinds of logic errors. There is a tendency to see many significant logic errors as single rather than paired. Three examples suffice to make this clear.

First, it is frequently noted by those resisting biological perspectives that one cannot legitimately reason from the descriptive to the normative. That is, we recognize that saying that something *is* so is very different from saying that something *ought* to be so. To reason directly from 'is' to 'ought' is to commit the well-known "Naturalistic Fallacy."³² Yet there is a symmetrical logic error, frequently overlooked, that is equally invalid. Charles Crawford has termed this the "Moralistic Fallacy," and one commits it when assuming that what ought to be is what is.³³ Here, reality is somehow expected to conform to one's normative preference for the way reality best would be. Though the Naturalistic Fallacy receives most attention, the Moralistic Fallacy is equally likely to lead us from sound conclusions. And popular cautions to not let norms follow facts are hazardous if they allow us to assert, too blithely, that facts follow preferences. Thus, while it would obviously be unsound to conclude that rape is acceptable simply because other species rape too, it is equally invalid to conclude that there are no biobehavioral influences on rape, simply because it may be offensive or undesirable that there be such influences.

Second, commentators concerned at the possible consequences of mistakenly *admitting* biobehavioral influences on rape have typically

32. The term was coined by G.E. Moore in *PRINCIPIA ETHICA* (Thomas Baldwin ed., 2d ed. 1993), at 62, 89-110, but the concept traces to the 1888 edition of DAVID A. HUME, *TREATISE OF HUMAN NATURE* 469-70 (L.A. Selby-Bigge & P.H. Nidditch eds., 2d ed. 1978). See also Jones, *Sex, Culture, and the Biology of Rape*, *supra* note 7, at 893-95.

33. See also Charles Crawford, *The Theory of Evolution in the Study of Human Behaviour: An Introduction and Overview*, in *HANDBOOK OF EVOLUTIONARY PSYCHOLOGY: IDEAS, ISSUES AND APPLICATIONS* 9 (Charles Crawford & Dennis L. Krebs eds., 1998); Charles Crawford, *Book Review*, 20 *EVOLUTION & HUM. BEHAV.* 137, 139 (1999) (reviewing *UNITING PSYCHOLOGY AND BIOLOGY: INTEGRATIVE PERSPECTIVES ON HUMAN DEVELOPMENT* (Nancy Segal et al. eds., 1997)).

under-examined the consequences of mistakenly *denying* biobehavioral influences on rape. Either there are such influences or there are not, and their existence, if any, must be amenable to the inquiries of science. But one cannot validly assume that it would be more costly to believe that there are biobehavioral influences on rape, if in fact there are none, than it would be to believe that there are not biobehavioral influences on rape, if in fact there are. Appropriate concern for the costs of being mistaken must take account of both types of errors.

Third, critics of biobehavioral theories of human behavior often fault researchers for attempting to draw meaningful analogies between the behavior of humans and that of other animals. To do so is to engage in anthropomorphism. Again, this sin has a twin: anthropodenial.³⁴ If anthropomorphism is the overextension of commonalities of causation on human and non-human behavior, then anthropodenial is the under-recognition of commonalities of causation. Both errors can foster unsound conclusions. Human self-consciousness and cognitive capacities foster grand abilities in the realms of analysis, decisionmaking, and symbolic manipulation. But the addition of those abilities to our species' behavioral repertoire cannot fully eclipse the evolutionary past, or render us exempt from biobehavioral influences (any more than the addition to a building of its 20th story harbor-view thereby makes its foundation and ground floor irrelevant).

* * * * *

These reasons briefly summarized, as well as a number explored in other works on the subject of biobehavioral perspectives on rape, recommend serious consideration of biology in the study of rape. It is possible that none, alone, would be considered sufficient. But it is difficult to maintain that biology is irrelevant to human rape in the face of their confluence. To the extent that legal thinkers are charged with reducing the incidence of rape, they would be well advised to learn more behavioral biology (and there are now a great many accessible sources that offer assistance in that regard).³⁵ Assuming legal thinkers were inclined to do so, the Parts that follow below explore several important aspects of that endeavor.

34. See Frans de Waal, *Are We in Anthropodenial?*, DISCOVER, Jul. 1997, at 50.

35. See sources cited *supra* note 19. For popular and accessible explanations of behavioral biology and evolutionary psychology, see MATT RIDLEY, *THE RED QUEEN: SEX AND THE EVOLUTION OF HUMAN NATURE* (1994); ROBERT WRIGHT, *THE MORAL ANIMAL: EVOLUTIONARY PSYCHOLOGY AND EVERYDAY LIFE* (1994).

II. CLARIFYING TERMS: ON AVOIDING FRUITLESS DEBATE

A. THE FOUNT OF CONFUSION

One of the most significant barriers to integrating life sciences and social science perspectives on rape concerns misunderstandings born of definitional ambiguities.³⁶ One way to illustrate this is with reference to the oft-encountered phrase "Rape is about violence, not sex."³⁷ See Figure 1.

I raise this example not to caricature non-biological theories of rape, for there are many such theories, and much utility in some. And while this slogan emerged from early feminist activism on rape issues, it is clear that the present multitude of feminist perspectives on rape cannot be fairly represented by any one slogan, let alone this one.³⁸ I want to explore definitional ambiguities through use of this particular phrase, instead, for two reasons.

First, the phrase has permeated the public, educational, and legal arenas to a degree that many alternative, and perhaps more subtle and accurate feminist perspectives have not.³⁹ Second, many of the ambiguities this phrase reveals can be generalized to other contexts, divorced of this slogan itself, in which they still operate to cloud interdisciplinary discourse.

36. For a recent discussion of situational ambiguities in the context of alleged sexual coercion, see Katherine Baker, *Text, Context, and the Problem with Rape*, 28 SW. L.J. 297 (1999).

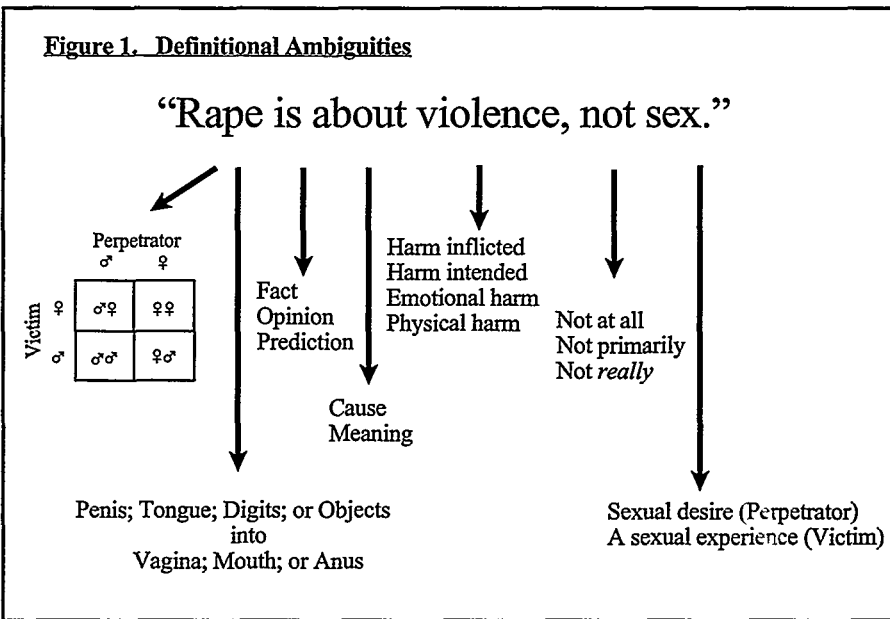
37. See Mary Ann Lergen, *The Anti-Rape Movement: Past and Present*, in RAPE AND SEXUAL ASSAULT: A RESEARCH HANDBOOK 1, 5 (Ann Wolbert Burgess ed., 1985). This formulation would later "prove to be an effective tool for changing public attitudes about the nature of the crime itself." *Id.*

A reader may equally substitute 'power,' 'hostility,' 'aggression,' and the like, for 'violence,' if he or she prefers.

38. See generally Charlene L. Muehlenhard et al., *Is Rape Sex or Violence? Conceptual Issues and Implications*, in SEX, POWER, CONFLICT: EVOLUTIONARY AND FEMINIST PERSPECTIVES 119, 119-20 (David Buss & Neil M. Malamuth eds., 1996) ("A simplistic answer to the question—Is rape sex or violence?—would be that nonfeminists view rape as sex, whereas feminists view rape as violence. . . . As we show, however, this simplistic answer is incorrect. Both feminists and nonfeminists have taken a variety of positions on this question. Furthermore, neither a 'rape is sex' nor a 'rape is violence' position has solely positive or negative implications for rape victims or for all women."). See also Jones, *Sex, Culture, and the Biology of Rape*, *supra* note 7, at 829-41.

39. One measure of its permeation is its frequent, typically unsupported, appearance in popular rape education materials. See, for example, RAPE PREVENTION EDUCATION PROGRAM, UNIVERSITY OF CALIFORNIA, DAVIS, RESOURCES AGAINST SEXUAL ASSAULT (undated brochure on file with author), wherein this statement appears, on page three: "Fact: Sexual assault is an act of physical and emotional violence, not of sexual gratification." See also ARIZONA STATE UNIVERSITY DEPARTMENT OF PUBLIC SAFETY, PUBLIC SAFETY AT ARIZONA STATE UNIVERSITY (Sept. 1, 1998) (flyer on file with author), wherein this statement appears, on page two: "These ideas assume that sexual assault is a sexual crime--a crime that is motivated by desire. It is not. It is a violent crime, a hostile attack intended to hurt and to humiliate. Sex is the weapon."

Consider the constituent words in sequence, and how the many eminently supportable but alternative meanings of them can reduce otherwise constructive dialogue about rape to a hopeless tangle of misunderstandings.



The term ‘rape’ can refer to at least four different combinations of perpetrator and victim sex: 1) male-female; 2) male-male; 3) female-male; and 4) female-female. Although it is not inconceivable that different people may have different theories for why these different combinations of violence may arise, one often sees one theory attacked because it fails to explain what it does not purport to explain. That is, a theory may be deemed faulty because it does not explain *all* of these perpetrator-victim combinations of sexual aggression, and someone else thinks it must do so to be a good theory.⁴⁰

Moreover, depending on jurisdiction, and whom you ask, ‘rape’ can refer to very different acts, such as the penile penetration of a vagina, on one hand, or something more, such as the insertion of objects into an anus, on the other. The nature of what is inserted (penis? tongue? digits? objects?), the precise orifice into which it is inserted (mouth? vagina? anus?), and even the ages of the individuals involved (adults? minors? one

40. One frequently sees this in the confused attempt by some to suggest that the very existence of male-male prison rapes makes any attempt to explain male-female rapes in biological terms invalid.

and the other?) are all variables relevant to the different meanings people ascribe to 'rape.'⁴¹ Here, again, different theories may explain different subsets of these phenomena, and not others. At the same time, those seeking a unified theory that applies generally to all contexts may find such theories unpersuasive. Although a well-defined discussion could be had addressing the higher-order issue of how generalizable a theory of rape or sexual aggression would likely need to be to be true, it is in fact rare that discussants ensure that they are talking about precisely the same things, and that the scope of 'rape' for a given conversation is clearly delineated, before jumping in to criticize each other.

The word 'is' (in "rape is about violence"), too, has multiple meanings. When someone makes a statement that rape 'is' something it is often unclear whether the speaker offers the statement as a claim about factual, objective truth (as in "The boiling point of water is 100 degrees Celsius"), as an expression of opinion (as in "That music is horrible"), or as an expression of what one wants to be true (as in "New York is going to win this game").⁴² Which 'is' it is defines acceptable bases for rebuttal, and discussants' divergent assumptions about the meaning of 'is' intended by another often yield thoroughly wasted arguments. Such divergences are particularly likely between social scientists and life scientists, since each set of disciplines has rather different views of methods by which an 'is' can be revealed, and the permanence or impermanence, objectivity or subjectivity, of the reality they attempt to discover and describe with 'is' statements.

Even more confusingly, the vagueness of 'is' raises an *expressio unius est exclusio alterius* interpretational problem. When someone says that rape is x, can one properly infer that he or she means that rape is x—and *nothing more*? Or is it implicit in 'is' that something can be many things at once? For example, the assertion that "rape is about violence" might mean, among other things, that rape is:

- a) about violence, and only about violence;
- b) about violence on balance (i.e., at least 51%), but also about something else, such as sex;
- c) predominantly about violence (e.g., 75%), but also about something

41. For thoughtful explorations of the definitional issues, see Keith Burgess-Jackson, *A Theory of Rape*, in *A MOST DESTABLE CRIME: NEW PHILOSOPHICAL ESSAYS ON RAPE* 92 (Keith Burgess-Jackson ed., 1999); Muehlenhard, *supra* note 38. "The question—'Is rape sex or violence?'—depends on how rape, sex, and violence are defined and conceptualized." *Id.* at 124. A useful discussion of some of the definitional issues also appears in Patricia A. Harney & Charlene L. Muehlenhard, *Rape*, in *SEXUAL COERCION: A SOURCEBOOK ON ITS NATURE, CAUSES, AND PREVENTION* 3, 3-6 (Elizabeth Grauerholz & Mary A. Koralewski eds., 1991).

42. See, e.g., Ken Plummer, *The Social Uses of Sexuality: Symbolic Interaction, Power and Rape*, in *PERSPECTIVES ON RAPE AND SEXUAL ASSAULT* 37, 42 (June Hopkins ed., 1984) ("Rape is not the unleashing of male desire; it is rather the articulation of male meaning.").

else; or

- d) overwhelmingly about violence (e.g., 98% violence), but also about something else.

Unelaborated, 'is' can describe anything from a trivial component of reality to an exclusive statement that purports to occupy the ontological field.⁴³

'About' yields a somewhat different problem. Claiming that rape is 'about' violence can refer either to cause, on one hand, or to effect and meaning, on the other. When such a claim refers to the underlying causes of rape, it is presumably a statement that something about violence (or power or hostility or aggression) causes the rapist to rape. Presumably, this is not intended to suggest that the rapist is not responsible for his actions, and we may therefore infer, on this line of interpretation, that an advocate of this view intends to indicate that the desire to do violence is an aspect of perpetrator motivation. The nature and boundaries of that aspect are unclear, as are, often, the deductive steps necessary to make the empirical claim.

If, instead, the term 'about' refers not to the cause of rape, but to its meaning, the question then becomes: "to whom?" Is the phrase "rape is about violence, not sex" then about the social meaning of rape, the meaning of rape to the victim, the meaning of rape to unraped but fearful females, the meaning of rape to the rapist, the meaning of rape to the victim's friends and family, the meaning of rape to some supposedly objective third party—or something else entirely?⁴⁴

The remaining words in the phrase "rape is about violence, not sex" are common to many discussions about rape and yet similarly protean. Understanding the scope of 'violence,' for example, typically requires reference to shifting social mores, legal meanings, and contexts. The meaning can vary as a function of the degree of harm inflicted and the amount of harm intended. It can also vary by the kind of harm, depending on the extent to which emotional as well as physical harm can be

43. Unelaborated, 'is' can apparently also make non-sex of prior sex. *Hear, e.g., Videotaped Grand Jury Testimony of William J. Clinton, Aug. 17, 1998, excerpted at The President's Testimony*, N.Y. TIMES, Sept. 22, 1998, at B1, available in 1998 WL 5428181 ("It depends on what the meaning of the word 'is' is.").

44. See Muehlenhard, *supra* note 38, at 120 ("Furthermore... the meaning of the question—'Is rape sex or violence?'—is ambiguous. It could refer to motivation, to consequences, or to how one experiences, conceptualizes, and labels the experience."). See also Catharine A. MacKinnon, *Sex and Violence: A Perspective*, reprinted in RAPE & SOCIETY: READINGS ON THE PROBLEM OF SEXUAL ASSAULT 28 (Patricia Searles & Ronald J. Berger eds., 1995) (raising the 'from whose point of view' issue); Barry Burkhart & Mary Ellen Fromuth, *Individual Psychological and Social Psychological Understandings of Sexual Coercion*, in SEXUAL COERCION 75, 76 (E. Grauerholz & M.A. Koralewski eds., 1991) (noting that "researchers tend not only to be separated by their different disciplinary contexts but also by their research focus on either victim or perpetrator, with relatively few researchers investigating both.").

considered violent.

'Not' is generally vague in this context simply because of the many degrees of not-ness. The word, in context, could mean "not at all." Alternatively, it could mean some variation of "generally not," such as "not at base," "not primarily," "not really," or "not, on average." Implicit in the use of 'not' is the existence of some threshold of contrary evidence at which the use of 'not' would become inappropriate. But it is unclear what amount of sex, for example, would be necessary to meet that threshold, and make the statement that "rape is about violence, not sex" false.

Of course, the term 'sex,' generally, could mean sexual desire (of the perpetrator) or a sexual experience (for the victim). In various contexts 'sex' can mean copulation, non-copulatory stimulation of one or more sexual organs, a meaningful and pleasurable exchange of bodily sensations between consenting adults, and other things besides. (Is phone sex sex?) If the meaning of 'sex' in the phrase "rape is about violence, not sex" is copulation, nothing more, then arguing that a forced copulation is violence, not copulation, is confusingly meaningless. If sex refers to meaningful and pleasurable exchange between consenting adults, then arguing, for example, that forced copulation is not un-forced copulation is similarly meaningless. It is increasingly obvious that at least to the extent that sex is meant to refer to a sexual experience of the victim, rape is not sex. What remains more controversial, and difficult to explore, is whether or not, notwithstanding that rape is not sexual for the victim, rape may be sexual for the perpetrator.

Of course, this deconstructive, interpretive exercise risks so atomizing the meaning of words in a common phrase that a whole that once exceeded the sum of its parts is reduced only to parts. Nevertheless, if we were to assume, quite conservatively, that each word in this short phrase had only four meanings, no more, that would leave us with a bewildering 4096 possible meanings. This is surely many orders of magnitude beneath the number of meanings to which this phrase alone is legitimately susceptible. And similar ambiguities infuse other discussions of and claims about rape.

This is particularly true when discussants shout across the social science-life science divide, for vocabularies and meanings are even more unfamiliar, and assumptions about them often more incorrect. And it is evident that most of the time the subject of biobehavioral influences on rape arises, discussants from different disciplines are vehemently pressing, denying, or defending intellectual ground, the contours of which are unimagined and unintended by their opposite numbers. And it is therefore not surprising that interdisciplinary discussions have often been acrimonious, confusing, and unproductive.⁴⁵

45. In 1983, for example, Professor Delbert D. Thiessen was invited to give a Fellow's Address at the meeting of the Division for Comparative and Physiological Psychology at the

B. WHAT BIOBEHAVIORAL THEORIES ADDRESS

Because failing to clarify vocabulary yields instant misunderstandings of scope and meaning, it is always important that rape scholars and discussants carefully describe what they do and do not mean. This is particularly true in the context of discussing biobehavioral theories of sexual aggression, because the content and methods of biology, particularly behavioral biology, are sufficiently unfamiliar to most commentators that misimpressions are exceedingly probable. In particular, those exploring biobehavioral theories of sexual aggression generally see themselves as attempting to explain one set of behaviors—males forcing copulation on females unwilling to copulate with them—while critics often fault those theories for not explaining what the critics see as the entire set of behaviors that should be explained by one unified theory.⁴⁶

One cannot logically challenge a scientific theory by simply pointing out that it does not explain things that it does not purport to explain. The more socially malleable the scope and definition of the behavior in question is, the more carefully one must respect the definitional limits defined by the theories themselves.

A theory that purports to explain one phenomenon is not invalid, without more, simply because it fails to explain all phenomena. Although it is important that all theories deemed reliable be consistent with each other, in the end, it is also important to consider that different phenomena have different causes. And if one is concerned at the over-application of this principle—at the thought that, for example, wily scientists will get away with defining too small a piece of the rape puzzle—one must also recognize that they risk doing so at the proper price of triviality and irrelevance. If the phenomenon of rape is as complex and diverse as it appears to be, even modest contributions toward understanding a subset of rape behavior will be useful.

annual convention of the American Psychological Association. He entitled his talk *Rape as a Reproductive Strategy: Our Evolutionary Legacy*. In advance of the talk, several critics charged that the title, as publicized, was offensive—in that it suggested that rape was an acceptable method for procreating. Hostile reaction inspired a small book from the critics: *VIOLENCE AGAINST WOMEN: A CRITIQUE OF THE SOCIOBIOLOGY OF RAPE* (Suzanne R. Sunday & Ethel Tobach eds., 1985) in which some history of this episode is recounted. In my view, this unfortunate incident is traceable, in large part, to the cross-disciplinary ambiguity of the term of art “reproductive strategy” which has a normative implication in lay minds, and no such implication to evolutionists. See, e.g., Julie Blackman, *The Language of Sexual Violence: More Than a Matter of Semantics*, in *VIOLENCE AGAINST WOMEN*, *supra*, at 115, 126 (“Strategies and legacies are connotatively positive.”).

46. Actually, the matter is often far more complicated, because critics often apply a higher standard to biobehavioral theories than they do to their own theory, which they often readily acknowledge does not explain *every* instance of sexual aggression; but that is not relevant here.

III. DIVIDING THEORY FROM THEORY: ON THE REALMS OF MEANING AND CAUSE

There is a famous optical illusion of a line-drawn cube of uncertain orientation. As the mind attempts to interpret the two dimensional image into three dimensional space, the cube appears to protrude first to one side, and then to the other. The very same data are susceptible of two very different, equally coherent, interpretations.

A great deal of academic scholarship, legal and otherwise, functions as if to fix in the reader's mind one view of a cube—to persuasively argue that an entire constellation of existing and perceived data points are better interpreted from one perspective than another.⁴⁷ 'Better,' here, is often implicitly defined with reference to a supplied value, such as economic efficiency, morality, consistency, distributive fairness, retribution, deterrence, group welfare maximization, and the like.

On few topics, of course, has the struggle over the view of a cube been more fully joined than on rape. And the extent to which biology provides any useful information about multiple origins of sexual aggression has been a common point of debate. This Part, and the one that follows, propose a way in which the right sequence and balance of perspectival division and integration can allow us to maintain two simultaneous views of the cube. These vindicate popular theories, improve law's behavioral model of rape, and inject insights from biobehavioral science into the mix.

A. TWO VIEWS OF THE CUBE

In common parlance, to have a view of a cube, a set of data, is to have a 'theory.' Thus, we speak freely of a theory of justice, a theory of punishment, a theory of government, or a lawyer's theory of the case. Theory means different things in these different contexts. But by and large to have a 'theory' in law (as well as in many social sciences that inform law) is to present a plausible opinion, a useful perspective, or both. Typically, such theories present ways to understand the complex inter-relationship of ideas, meanings, events, and consequences. And upon the foundation of such theories the legal system attempts to build socially important and effective approaches to regulating law-relevant behavior.

In this sense, one can say that each main feature of law reflects some theory. This is certainly true in the context of rape. Most early rape theorists, for example, were psychiatrists, and from their perspective rape reflected mental illness. Consequently, the laws of no less than thirty states at one time gave form to this theory of rapists as sick deviants and sexual psychopaths. They defined a rapist as, for example, "a person unable to

47. The biologist Richard Dawkins has invoked the Necker Cube metaphor in a different context. See RICHARD DAWKINS, *THE EXTENDED PHENOTYPE: THE LONG REACH OF THE GENE* (1999).

control his sexual impulse or having to commit sex crimes.”⁴⁸

The later ascendancy of feminist and sociological perspectives on rape, beginning in the 1970s and extending through modern day, largely replaced the psychiatric view of rape. From the perspective of these disciplines, rape is something normal people may do when they have been socialized, acculturated, and trained to rape. Here, rape is viewed as a function of social traditions, gender roles, and cultural determination, as well as patriarchy, dominance, and violence. Again, law followed suit. The federal Violence Against Women Act (VAWA) was one example of a statute giving form to the theory that the violence of rape is akin to the violence of the ‘hate’ crimes that involve, for instance, gay-bashing and racially-motivated violence.⁴⁹

There is, of course, another set of academic disciplines in which ‘theory’ has a more narrowly defined meaning, and in which theories of rape are also explored. In the sciences, to have a theory is to have a parsimonious explanation of observable phenomena, from the premises of which falsifiable predictions can be derived and tested. Good theories survive efforts at falsification. Moreover, new theories are judged against the backdrop of other theories. In the end, all must reconcile. So a new theory must either be consistent with previously accepted theories or initiate their reformulation. In the same way that we could not long tolerate a theory of chemistry inconsistent with a robust theory of physics, scientists are loathe to maintain any theory of behavior that depends on principles inconsistent with current theories of biological evolution—both morphological and behavioral.

Rape scholars get into trouble, it seems, when they fail to adequately distinguish between these two very different meanings of theory—either when proposing one or critiquing one. Consequently, a critical feature in the transition toward models of rape that integrate social science knowledge with life science knowledge is to be able to make such distinctions.

B. OF MEANINGS AND MOTIVES, CAUSES AND CORRELATIONS

One way to divide theory from theory in a useful and systematic way is to recognize the distinction between what we might call the realm of meaning and the realm of cause. Recognizing these as two equally

48. DIANA SCULLY, UNDERSTANDING SEXUAL VIOLENCE: A STUDY OF CONVICTED RAPISTS 35 (1990) (citing Karl M. Bowman & Bernice Engle, *Sexual Psychopath Laws, in SEXUAL BEHAVIOR AND THE LAW* 757 (Ralph Slovenko ed., 1965)).

49. Pub. L. No. 103-322, §§ 40111(a)-40611, 108 Stat. 1796, 1903-53 (codified as amended in scattered sections of 8, 18, 28, and 42 U.S.C.). For discussion, see Jones, *Sex, Culture, and the Biology of Rape*, *supra* note 7, at 835, 921-25. As this article went to press, the civil remedy provision of VAWA was invalidated by *United States v. Morrison*, 2000 WL 574361 (May 15, 2000), *aff'g* *Brzonkala v. Virginia Polytechnic Inst. and State Univ.*, 169 F.3d 820 (4th Cir. 1999).

important views of the cube will contribute toward more rational discussion, a richer understanding of rape, and possibly increased effectiveness in law's ability to deter it.

I propose this not because meanings and causes are mutually exclusive, but because even when perspectives on them overlap they nonetheless represent fundamentally different kinds of inquiries. This is, though not an earth-shattering insight, one that has been surprisingly neglected in the rape literature itself. For it is remarkably common for scholars to make assumptions that actual effects of rape are intended effects of rape, and that the meanings of rape reveal the actual motives of rape. Because correlation is not causation, however, there need be no automatic connection between the effect of an act and the reason for doing it.

There are two principle advantages of dividing theory from theory in a way that recognizes the distinctions between cause and meaning. First, such a distinction allows researchers more freedom to pursue the subject of their own domain, unharassed by critics from the other. Second, such a division, which echoes the 'ought'-'is' distinction, most closely matches the product of different rape scholars with the aspect of legal process in greatest need of that product.

Rape and the Realm of Meaning. It is typically from the realm of meaning that law receives direction and social goals to pursue. For it is in the normative and interpretive arena that one answers such questions as: What does it mean to live in a society in which rape occurs? Is rape a good thing or a bad thing, and why? How important is it that we act to prevent rape? Law would be agnostic on the causes of rape, were it not for the meanings of its effects, and the effects of its meanings. There are historical, political, social, feminist, and moral dimensions to rape, among others. Each offers important contributions to public and private understandings and reactions to the phenomenon. Consequently, it is in the realm of meaning that the significance of rape, and the extent of its harms, are perceived, processed, and assessed.

Rape and the Realm of Cause. For some disciplines, it is sufficient to study only the meanings of rape. Law is not one of these. Meanings may affect law's goals, but optimally effective paths toward reaching those goals typically require an accurate understanding of the things that influence the probability of the behavior in question. Consequently, law must attend as closely to cause as to meaning.

IV. DIVIDING CAUSE FROM CAUSE: ON PROXIMATE AND ULTIMATE INFLUENCES

Dividing views of rape into two main perspectives—those from the realm of meaning and those from the realm of cause—is alone insufficient to further the complete transition from prior behavioral models on rape to those that incorporate biobehavioral perspectives. The next step toward

transition requires the subdivision of causes into two kinds. Biologists term these "proximate" and "ultimate" causes, respectively.⁵⁰

A. PROXIMATE AND ULTIMATE CAUSES

All behavior can be understood to be the result of these immediate (proximate) and evolutionary (ultimate) causes. Proximate causes involve physiology and biochemistry as well as an organism's unique developmental history. Ultimate causes involve the history and reproductive consequences of behavior, viewed in evolutionary time.

This classic example will clarify. Proximate causes of a male bird's spring singing include the hormonal changes triggered by the lengthening of successive days, the activation of particular motor neurons to the vocal apparatus, and each bird's individual experience of songs heard and songs practiced. Ultimate causes of the same bird's spring singing address the "purposes" of singing—claiming territory, advertising genetic fitness, and attracting mates—all of which contribute to reproductive success and have thus been favored by natural and sexual selection. Explanations of ultimate cause are thus hypotheses about selective advantage of one behavior relative to another. And the ultimate causation lens helps explain why it was more probable that the lengthening days of spring, rather than the shortening days of fall, would lead to singing—as well as why lengthening days lead to singing, rather than to some alternative behavior disconnected from mating success.

The principal advantages of conceptualizing behavior as the product of both proximate and ultimate causes is this. In some circumstances it prevents people from arguing about whether this or that causes a behavior, when in part both do. Just as it is apparent that neither genes nor

50. On proximate and ultimate causation generally, see JOHN ALCOCK, *ANIMAL BEHAVIOR* 3-7 (6th ed. 1998); TIMOTHY H. GOLDSMITH, *THE BIOLOGICAL ROOTS OF HUMAN NATURE: FORGING LINKS BETWEEN EVOLUTION AND BEHAVIOR* 3-11, 46-69 (1991); John Alcock & Paul Sherman, *The Utility of the Proximate-Ultimate Dichotomy in Ethology*, 96 *ETHOLOGY* 58 (1994); Owen D. Jones, *Genes, Behavior, and Law*, 15 *POL. & LIFE SCI.* 101 (1996); Goldsmith & Jones, *supra* note 19; Bobbi S. Low, *Human Sex Differences in Behavioral Ecological Perspective*, 16 *ANALYSE & KRITIK* 38, 40-42 (1994). As Nancy Thornhill stated:

Proximate explanations for the existence of adaptations focus on genetic, biochemical, physiological, developmental, social, and all other immediate causes leading to the expression of adaptations. Ultimate explanations of adaptation have their theoretical foundation in causes that operated during evolutionary history to lead to adaptation. . . . Proximate and evolutionary explanations of causation do not conflict. Both proximate and ultimate explanations are needed for complete understanding of adaptations. By understanding the evolutionary purpose of an adaptation, one should be able successfully to predict and understand the proximate causes that affect the expression of the adaptation.

Nancy Wilmsen Thornhill, *Psychological Adaptation to Sexual Coercion in Victims and Offenders*, in *SEX, POWER, CONFLICT: EVOLUTIONARY AND FEMINIST PERSPECTIVES* 90 (David Buss & Neil M. Malamuth eds., 1996).

environment can alone yield behavior, neither proximate nor ultimate causes are superior to the other. Just as length and width of a rectangle combine to yield area, proximate and ultimate causes are inextricably entwined. And behavior, including all law-relevant behavior, and including rape behavior, is the product of both.

B. TWO VIEWS REVISITED: THE ROLES OF SOCIAL AND LIFE SCIENCES

I began by observing that social science perspectives on rape and life science perspectives on rape were over-divided and inappropriately treated as necessarily competitive. One may wonder why an effort intended to help integrate these perspectives has spent so much space describing divisive processes. Indeed, it may be tempting, having divided theories of meaning from theories of causes, to conclude that social sciences would only illuminate the former, life sciences only the latter, and we would merely have replicated another reason to maintain the social science-life science division that I had earlier protested. That would be a mistake.

Admittedly, it will more often than not be the case that views from the realm of meaning will be refined through contributions of the social sciences.⁵¹ But insights in the realm of causation can and should be furthered by both social sciences and life sciences. Here, the social sciences are most likely to contribute to the identification and understanding of proximate causes. The life sciences may be most useful in offering insights about ultimate causation, but also can contribute to identifying and explaining the operation of proximate causes.

V. TWO COMPLEXITIES OF TRANSITION

The transition to behavioral models of rape that include biobehavioral insights raises at least two kinds of complexities. This Part addresses each in turn.

A. OVERLAPPING CONCEPTS

Views from the realms of meaning and cause obviously intersect in the nature of rape behavior itself. But there will in some contexts be a deeper interactivity between the two than might first appear. This is because, in the end, the realms cannot be inconsistent with each other.

1. On The Causes of Meanings

Because meaning exists in the brain, and the brain is an evolved information processor, behavioral biology is necessarily implicated in the construction of meaning. One would not want to push the relevance of this too far, since observing in this particular context that all analytical abilities

51. However, to the extent that ascertaining meaning often invokes morality, the evolutionary, biobehavioral perspectives on the visceral fundamentals of moral sentiments are once again relevant. *See generally* Jones, *On the Nature of Norms*, *supra* note 6.

and capacity for free choice and decision-making are also products of an evolutionary process could seem almost trivially true.

What I have in mind, instead, are those contexts in which meanings are most closely derived from aspects of human emotion. For example, rape can be interpreted to be a bad thing, in part, because of the emotional distress it inflicts on victims and those who care about them. There are both theoretical and empirical reasons to believe that these emotions are, themselves, evolved psychological adaptations, which culture both reflects and reciprocally augments and influences. So the life sciences can in some ways contribute to even our understanding of why we, as humans male and female, tend to find rape so excruciatingly repugnant, and why every known legal system, in every known human society, treats rape as a powerfully significant and serious offense.

2. On The Meanings of Causes

In addition, there will be times when new insights on causation affect theories in the realm of meaning. This will primarily be true whenever conclusions about meaning necessarily depend on assumptions about causation. For instance, the biobehavioral perspective on sexual aggression strongly suggests that patterns of rape in humans reflect evolved male psychology, and at least some component of sexual desire, (albeit often appearing in concert with other proximate desires). To the extent some interpretation of the meaning of rape is predicated on the complete absence of any sexual component, that conclusion in the realm of meaning would be weakened by robust findings in the realm of causation.

This potential interactivity between the realms of meaning and cause may provide one of the bases for resisting conclusions from the realm of cause that trace components of rape to sexual desire. That interactivity also reflects one of the significant advantages of evolutionary analysis in law: the clarification of policy tensions, and the improvement of cost-benefit analyses.⁵² That is the subject of the second complexity that the transition may engender.

B. POLICY TENSIONS IN RAPE

On one hand, commentators rather broadly agree that reducing the incidence of rape is an important goal.⁵³ And to the extent a greater understanding of the causes of rape helps us to reduce its incidence, law furthers that goal. On the other hand, the literature on rape has effects that reach beyond the rape context, and it is at least theoretically possible that some beneficial effects could be jeopardized by developments in the realm

52. See Jones, *Evolutionary Analysis in Law*, *supra* note 19, at 1236-40. For information about the Society for Evolutionary Analysis in Law (SEAL) see <www.sealsite.org>.

53. Economists would phrase this differently, saying that what we want to do is reduce the sum of the costs of rape and the costs of preventing rape.

of causation. For example, highlighting rape as one of the burdens comparatively greater for women than for men has the laudatory effect of fostering greater empathy for women, which can translate into concrete political and economic benefits. Some of the diverse branches of feminism go further, making much of the supposed absence of sexual component to rape. In theory, at least, whatever marginal increase in the gains for women depended on this particular interpretation of the causes of rape might be perceived as vulnerable if that interpretation lost some credibility.

Put bluntly, an increase in law's effectiveness to reduce the incidence of rape may somewhat compromise the ability of rape literature to leverage other gains for women. And, of course, there are potential costs to important women's issues that arguably may follow from any widespread misunderstanding about the proper qualifications on and limits of explanations integrating social science thinking with the biology of behavior. We would be foolish not to recognize these potential interactions of the realms of cause and meaning.

The biology, itself, has absolutely nothing to say about how we should value the relative cost and benefits of understanding the biobehavioral influences on sexual aggression. That evaluative process can and should take place in the usual arenas in which policy goals are weighed against each other and set. But, at the very least, biobehavioral perspectives are worth the serious consideration of those for whom the reduction of rape and fear of rape is a primary goal. And, to the extent that evolutionary analysis of rape clarifies the policy tensions, and helps us to loosely quantify potential tradeoffs between existing policies, then it may serve to help us guide legal mechanisms in a way that may help us to achieve some net increase in our ability to pursue a number of important goals simultaneously.

VI. CONCLUSION

All biological processes, including normal human brain development, ultimately depend upon rich environmental inputs. Similarly, all environmental influences can only be perceived, sorted, mentally analyzed, and understood through biological and therefore principally evolved processes. Consequently, it is increasingly clear that environmental determinism is as incoherent as genetic determinism, and that no human behavior can be fully understood from environmental or genetic perspectives alone. Human behavior emerges from an information-processing brain, the specialized and patterned functioning of which reflects both a richly influential developmental environment and a distinct history of relentless exposure to the operation of evolutionary processes.

This is relevant to law generally because law's effectiveness often crucially depends on the accuracy of its behavioral models. And this is relevant to rape law specifically because both theory and data strongly

suggest that the potential reproductive consequences of forced copulation to our male and female ancestors embedded in the male-typical and female-typical psychologies context-specific predispositions (as common in our species as in many others) that continue to affect the likelihood of sexual aggression, and resistance to sexual aggression, respectively. A greater understanding of the complexities of and causal influences upon rape behavior may help to improve our ability to deter rape through the environment-manipulating mechanisms of law.

The purpose of this article has been to explore how a transition in law from using fragmented and isolated models of rape behavior to using more unified and accurate models might best proceed. Specifically, I have proposed several features important to an eventual integration of social science and life science perspectives. Somewhat counter-intuitively, I have proposed that a more systematic conceptual division must precede effective integration. Sorting must precede synthesis.

First, a successful transition to an integrated model requires the self-conscious and explicit disentanglement of two distinct kinds of theories: one from the realm of meaning, the other from the realm of cause. This will reduce academic contests for disciplinary hegemony by enabling important contributions to the meaning of rape and to the causation of rape to proceed simultaneously. Second, a successful transition requires the disentanglement of two different kinds of causes: proximate (immediate) and ultimate (evolutionary). Recognizing the ways in which these two kinds of causes underlie all behavior provides a far better understanding of the complex relationships between environmental conditions and behavior than can be obtained from studying either kind of cause in isolation.

With their contributions to the rape literature similarly sorted (by relevance to aspects of rape, rather than according to disciplinary boundaries) the social science and life science views of rape will dovetail, enabling a newly integrated understanding of rape phenomena. Within that understanding lies ample accommodation for two simultaneous views of the cube, one that highlights law's goals, the other that offers some insights into ways to achieve them.