A DARWINIAN INTERPRETATION
OF INDIVIDUAL DIFFERENCES
IN MALE PROPENSITY
FOR SEXUAL AGGRESSION

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ABSTRACT: This article reviews studies of individual differences in male propensity for sexual aggression, examines the implications of the findings for the formulation of Darwinian theories of sexual aggression, and discusses implications for law and policy. A Darwinian view of sexual aggression is likely to have practical implications through better understanding of its etiology.


I. INDIVIDUAL DIFFERENCES

Any theory aimed at explaining male sexual aggression must incorporate what is known about individual differences in male propensity for sexually aggressive behavior. These individual differences can be grouped, for the most part, according to three major factors: deviant sexual preferences, mating effort, and antisociality. In this article we define these terms, review the empirical

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evidence, and offer Darwinian interpretations. We then discuss implications for law and public policy. We focus on men who are sexually aggressive against women, but also occasionally refer to men who sexually offend against children. We discuss both acquaintance and stranger rape, but due to space limitation we will not discuss marital rape or rape that occurs in the context of war and social upheaval.

A. Deviant Sexual Preferences

Sexual preferences are usually considered deviant when they are both (1) statistically unusual and (2) likely to inflict unwanted harm on self or others if acted upon. The deviant sexual preferences most often studied include pedophilia (a preference for prepubescent males or females) and preferential rape (a preference for violent, nonconsenting sexual activities with postpubescent individuals, most often females). Child molesters and rapists are the most commonly studied groups of sex offenders.

From a Darwinian perspective, anomalous sexual preferences are those that lower one's inclusive fitness in most circumstances (especially in the environment in which our species evolved). Anomalous preferences encompass most, if not all, sexual deviances, most major paraphilias as usually defined in psychiatry or sexology, and other sexual preferences, such as homosexuality, that are not usually considered deviant or paraphilic. Anomalous sexual preferences are much more common in men than in women. They have rarely been documented in nonhuman species, and, because they reduce rather than enhance reproductive success, they are relatively rare.

Male sexual preferences can be measured in a number of ways. Phallometry, the measurement of penile erection during the presentation of sexual stimuli in the laboratory, offers the most objective measure, even when men are motivated to conceal their true preferences. The phallometric study of male sexual aggressors has produced very consistent findings. Men apprehended for rape, defined here as a sexual assault against a postpubescent female, show greater relative penile arousal to audiotaped stories depicting nonconsenting, coercive sex than men who have never been apprehended for a sexual offense. One study

1. See generally MARTIN DALY & MARGO WILSON, HOMICIDE (1988); RICHARD WRANHAM & DALE PETERSON, DEMONIC MALES (1996) (offering a Darwinian view on these topics).
on self-reported sexual aggression (mostly acquaintance rape) among young males recruited from the community produced similar results.\(^5\) Larger differences between phallometric measurements of rapists and other men are found when the audio stimuli include very graphic and brutal descriptions of rape scenarios.\(^6\)

Child molesters' phallometrically measured sexual preferences differ from those of other men (in this case, they exhibit preference for children over adults).\(^7\) Phallometrically measured sexual preferences have higher discriminant validity than any other method when the appropriate procedures are used.\(^8\) Phallometric measures are also good predictors of sexual recidivism among both rapists and child molesters.\(^9\)

**Causes of Individual Differences in Sexual Preferences**

The male sexual preference system appears to direct men’s sexual behaviors toward fertile women. Judgments of physical and sexual attractiveness, covertly measured viewing time, and phallometry indicate that most men, regardless of their own age, prefer healthy, average weight, young adult females with specific waist-to-hip ratios as sexual partners.\(^10\) There is striking agreement across cultures on the sexual attractiveness of individual women.\(^11\) Male sexual preference for characteristics associated with female reproductive success appears to be an adaptation. Most men’s sexual preferences are, similar to other


7. QUINSEY & LALUMIÈRE, supra note 3.


9. See generally Vernon L. Quinsey et al., *Violent Offenders: Appraising and Managing Risk* (1998). Follow-up studies indicate that child molesters are more specialized in their offending than rapists in the sense that they are more likely to commit a new sexual offense and less likely to commit a subsequent nonssexual offense than rapists. Specialization in a particular type of offense, however, can be used in different senses. Rapists, with the exception of those who have already committed a number of rapes, are unspecialized in the sense that their next crime is more likely to be nonssexual than sexual. However, rapists are specialized in the sense that they are more likely to commit a new sex offense than offenders who have never committed one.


aesthetic experiences, “unconsciously realized avenues to high fitness in human evolutionary history.” 12

Like other emotional, motivational, and perceptual systems, the sexual preference system is probably modularly organized, each “module” designed to guide behavior and to solve a particular problem of partner selection and courtship. 13 Many of the modules, for example, those related to gender, age, body shape, and partner variety, are sexually dimorphic in that the modules of males and females differ on average. 14

From a Darwinian point of view, anomalous sexual preferences that reduce fitness are likely to be caused by pathological processes. 15 We have hypothesized that different anomalous sexual preferences, such as homosexuality and pedophilia, are the manifestation of different malfunctioning modules, likely caused during the sexual differentiation of the male brain in utero. Male homosexuality would involve a malfunction of one of the “gender” modules, while the modules (preference for youth, partner variety, and so on) remain intact. Male pedophilia would involve a malfunction of the “body shape” module, while the other modules, such as preference for youth, would remain intact. Other malfunctions of various modules associated with phases of male courtship could lead to exhibitionism, voyeurism, toucheurism, or preferential rape. 16

One possible cause of module malfunction is a maternal immune response to male-specific features of the fetus, such as circulating testosterone or other androgens, H-Y or other male-specific antigens, or other paternal antigens. 17 This immune response may lead to incomplete or disrupted masculinization of what

15. Pathology is defined as a failure of a mechanism to perform its evolved function.
is originally a female brain. One possible cause of a maternal immune response in utero may be successive pregnancies with male fetuses.

Much remains to be learned about the pathological causes of anomalous sexual preferences. A cross-fostering design is needed to determine whether anomalous preferences are developed prenatally or otherwise. Although current postnatal theories of the development of sexual preferences do not predict the observed sibship composition of homosexual men and paraphilic sex offenders, the possibility that the “older brother effect” reflects postnatal influences cannot be totally excluded. Assuming that a prenatal maternal immunoreactivity mechanism is shown, the operative maternal antibodies and their genetic templates will have to be identified. One clue may be that homosexuality is heritable. It is possible that the genetic marker on the long arm of the X chromosome associated with male (but not female) homosexuality is related to genes involved in immunoreactivity. Finally, the evolutionary mechanism that

18. Males are more likely to experience malfunctions because the "default" in brain development is female. See sources cited supra note 14.

19. See generally Thomas Gualtieri & Robert E. Hicks, An Immunoreactive Theory of Selective Male Affection, 8 BEHAV. & BRAIN SCI. 427 (1985). The idea that a maternal immune response can disrupt the development of the male sexual preference system is supported by the following evidence: (1) homosexual males, paraphilic rapists, and paraphilic child molesters tend to be born late among their brothers but not among their sisters; and (2) homosexual males show female-like or less masculinized hypothalamic and commissural brain structures, body development (weight and onset of puberty), spatial abilities, fingerprint patterns (which are determined in utero), and auditory interhemispheric laterality. See generally Ray Blanchard, Birth Order and Sibling Sex Ratio in Homosexual Versus Heterosexual Males and Females, 8 ANN. REV. SEX RES. 27 (1997) (reviewing the extensive evidence concerning birth order and male homosexuality). See Karine Côté et al., Birth Order, Birth Interval, and Deviant Sexual Preferences Among Sexual Offenders (Nov. 1998) (unpublished manuscript); Lalumière et al., supra note 13 (reviewing evidence regarding the birth order of paraphilic sex offenders). For more findings on subgroups of sex offenders, see Anthony F. Bogaart et al., Pedophilia, Sexual Orientation, and Birth Order, 106 J. ABNORMAL PSYCHOL. 331 (1997); Jiri Raboč & Jan Raboč, Number of Siblings and Birth Order of Sexually Dysfunctional Males and Sexual Delinquents, 12 J. SEX & MARITAL THERAPY 73 (1986); Ray Blanchard & Anthony F. Bogaert, Birth Order in Homosexual Versus Heterosexual Sex Offenders Against Children, Pubescents, and Adults, 27 ARCHIVES SEXUAL BEHAV. 595–603 (1998); Lalumière et al., supra note 13. One would expect that pedophilic child molesters, who do not have the male-typical preference for small waist-to-hip ratios, would show similar “feminized” characteristics. Whether the same feminized characteristics is unclear. To date, no one has been able to identify naturally occurring psychosocial, postnatal sources of variation in sexual preferences.


maintains anomalous sexual preferences in the population despite their negative effects on Darwinian fitness will have to be specified.\textsuperscript{23} Defining anomalous sexual preferences as fitness reducing and viewing the sexual preference system as modular and designed to solve particular problems of partner selection and courtship offer strong theoretical guidance to research on the causes of variation in male sexual preferences. This research is important because anomalous sexual preferences are known to be crucial factors in predatory rape and child molestation. Of course, not all sex offenders are sexually deviant; some acts of rape seem to be part of a sexual strategy requiring a high amount of mating effort.

**B. Mating Effort**

Men exhibit more interest than women in partner novelty, casual sex, and physical attractiveness.\textsuperscript{24} This may be part of a male-preferred courtship-mating strategy associated with male preference for physical signs of female reproductive capability. Differences in the preferred dating and mating strategies of men and women are expected from differences between the sexes in the minimum amount of parental investment required for successful reproduction. In ancestral environments, number of sexual partners was likely to have been an important factor limiting reproductive success among men, while the amount of paternal investment was an important limiting factor among women.

A Darwinian view of heterosexual relationships suggests that men and women both compete and compromise with each other because their reproductive interests are not identical. One way in which the divergent reproductive interests of men and women are manifested is male sexual coercion. Such coercion, by definition, circumvents female choice.

There are a number of conditions in which men might be expected to be sexually coercive: when the costs of such coercion are low (as, for example, in wartime\textsuperscript{25}), when women are perceived as political or ideological adversaries,\textsuperscript{26} when men are unable to calculate or perceive possible costs (because of alcohol-

\textsuperscript{23} We suspect that this process is a byproduct of health benefits derived from having highly responsive immune systems.

\textsuperscript{24} See generally David M. Buss, Sex Differences in Human Mate Preferences: Evolutionary Hypotheses Tested in 37 Cultures, 12 BEHAV. & BRAIN SCI. 1 (1989); David M. Buss & David P. Schmitt, Sexual Strategies Theory: An Evolutionary Perspective on Human Mating, 100 PSYCHOL. REV. 204 (1993); Russell D. Clark III, The Impact of AIDS on Gender Differences in Willingness to Engage in Casual Sex, 20 J. APPLIED SOC. PSYCHOL. 771 (1990); Russell D. Clark III & E. Hatfield, Gender Differences in Receptivity to Sexual Offers, 2 J. PSYCHOL. & HUM. SEXUALITY 39 (1989); Monica A. Landolt et al., Sex Differences and Intra-Sex Variations in Human Mating Tactics: An Evolutionary Approach, 16 ETHOLOGY & SOCIOBIOLOGY 3 (1995).

\textsuperscript{25} See Iris Chang, The Rape of Nanking: The Forgotten Holocaust of World War II (1997).

\textsuperscript{26} See William D. Walker et al., Authoritarianism and Sexual Aggression, 65 J. PERSONALITY & SOC. PSYCHOL. 1036 (1993).
induced myopia in dating situations, or because they exhibit antisocial tendencies, and when men can attract many partners and are unconcerned about their future relationship with a particular woman.

Mating effort is defined as energy directed to locating, courting, and sexually interacting with members of the preferred sex and age. It can be contrasted with parenting effort, in which energy is directed to protecting and investing in one's mate and offspring. Mating and parenting effort can be seen as opposite ends of a continuum of energy distribution in a given time period. Some kind of mating effort must precede parenting effort, but mating effort is not always followed by parenting effort. Men expend more mating effort than women, but there are notable male intrasex variations. These variations are associated with personal characteristics and behaviors, such as antisociality and a history of sexually coercive behavior in dating contexts.

Mating effort can be measured in a number of ways. In our research we have used two self-report measures: the Sociosexuality Inventory (SOI), a seven-item questionnaire that combines both interest and success in mating effort, and the Partner Variety and Casual Sex scale (PVCS), an eleven-item questionnaire that measures interest in attracting and acquiring short-term sexual partners. Questions about sexual history (for example, age at first intercourse, number of lifetime sex partners, number of one-night stands in the last year) have also been used to assess male intrasex variation in mating effort.

Two recent studies on the dating interests and behaviors of men showed that men who are interested in and successful in pursuing a high mating effort strategy tend to report having been sexually coercive in the past. Men who score high on measures of mating effort also report higher sensation seeking, higher antisociality, and more adversarial sexual beliefs (e.g., 'In a dating relationship a woman is largely out to take advantage of a man'), compared to men who score low on mating effort. Other researchers have found that sexually coercive men have an extensive history of uncommitted sexual relationships, a preference for

28. See infra text accompanying notes 46-49.
29. Lalumière & Quinsey, supra note 5.
32. Lalumière & Quinsey, supra note 5.
33. See generally Martin L. Lalumière et al., A Test of the Mate Deprivation Hypothesis of Sexual Coercion, 17 ETHOLOGY & SOCIOBIOLOGY 299 (1996); Lalumière & Quinsey, supra note 5.
partner variety and uncommitted sex, and hostile and antisocial tendencies. Although this research was conducted mainly with students or other individuals who have predominantly reported engaging in acquaintance rape, preliminary findings from our research using adjudicated rapists (who typically have committed stranger rapes) suggest that these men also score high on measures of mating effort.

**Causes of Variation in Mating-Parenting Effort**

Elsewhere we have argued that the male sexual psychology has been designed to maximize reproductive success by varying the ratio of mating to parenting effort according to the following circumstances: one’s own mate value, which is itself determined by factors such as attractiveness, personality, social status, access to resources; the target’s mate value, which is related to the probability of successful interaction with a particular person; the local sex ratio (that is, availability of potential partners relative to the number of competitors); and current social conditions and norms. We have found that students’ choice of mating tactics are related to their perception of their mating success and to the physical attractiveness of the target person. Men who perceive themselves as more successful in attracting partners tend to adopt a short-term mating approach, and physically attractive female targets tend to elicit a long-term mating approach in men. Almost all men who perceived themselves as less successful chose long-term mating tactics when exposed to a very attractive female.

Ethnographic evidence suggests that men who succeed in competition for resources or status tend to increase their number of mates and have greater reproductive success. Cross-cultural research shows that women prefer mates who have such characteristics as good financial prospects, ambition, and industriousness. In a recent study, Péruès found that unmarried males who scored high on measures of income, prestige, and power also scored high on a measure combining number of sexual partners and frequency of intercourse. Success in competition for resources or status, or both, is likely an important variable affecting mating success and, consequently, an important variable affecting males’ position along the mating-parenting effort continuum.

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The relationships between competition for resources and status, mating effort, mating success, and the use of sexually coercive tactics have been discussed as part of the resource deprivation hypothesis. This hypothesis states that (a) men compete more than women for status and resources, (b) men who gain more resources and status enjoy reproductive benefits because women prefer to mate with successful men, (c) men who are less successful at gaining resources and status have reduced access to desirable women and turn to alternative mating strategies such as sexual coercion. According to this hypothesis, rape is part of the evolved mating strategy but is not a predominant mating tactic.  

The idea that rape may be part of an evolved, adaptive mating strategy has received some support. Unlike other criminals, rapists tend to select victims of reproductive age, and men who repeatedly commit sexual offenses are increasingly likely to have intercourse with their victims. In turn, rape may have exerted selection pressure on women’s psychology and behavior. For example, married rape victims of reproductive age have more profound emotional and behavioral responses to rape than other females, and fertile (ovulating) females are more likely to avoid situations where a threat of rape may exist than other females.  

As predicted by the resource deprivation hypothesis, convicted rapists tend to come from lower social strata. However, studies assessing the direct relationship between mating success and the use of sexually coercive tactics have not supported the hypothesis. As mentioned above, young males who perceive themselves as less successful tend to adopt a long-term mating strategy (showing a compromise with females’ preferences) and do not report having used sexually coercive tactics, whereas young males who perceive themselves as more successful tend to adopt a short-term mating strategy (high mating effort) and more frequently report having used sexually coercive tactics. Also, men who have good earning potential have been shown to use sexually coercive tactics and high mating effort strategies, but more research is needed on this issue.  

44. See generally Tara J. Chavanne & Gordon G. Gallup, Variation in Risk Taking Behavior Among Female College Students as a Function of the Menstrual Cycle, 19 EVOLUTION & HUM. BEHAV. 27 (1998). That male sexual coercion may have been a strong selection pressure on females in many species is discussed in T.H. Clutton-Brock & G.A. Parker, Sexual Coercion in Animal Societies, 49 ANIMAL BEHAV. 1345 (1995).
In summary, high mating effort and high mating success are characteristics of young, unadjudicated, sexually coercive men. Studies of adjudicated rapists (who typically have committed predatory rapes), of men of low socio-economic status and poor prospects, and of older men are needed to further test the resource deprivation hypothesis. The idea that sexually coercive tactics are part of an evolved mating strategy (whether universal or not) is likely to be correct, but the actual parameters of the strategy, including the identification of the contexts that are more likely to elicit the use of coercive sex, need to be elucidated. It is clear, however, that a preference for high mating effort and the use of sexually coercive tactics are closely linked. Furthermore, both mating effort and coercive sex are closely linked to antisociality.

C. Antisociality

Antisociality is a construct describing behaviors, attitudes, beliefs, personality features, and interpersonal styles that are generally harmful to others. Antisocial individuals have early, varied, and chronic conduct “problems.” They are usually aggressive, hostile, impulsive, manipulative, and callous. Psychopathy is the extreme manifestation of antisociality.45

Sexually coercive men have antisocial personality characteristics such as lack of empathy, domineeringness, hypermasculinity, and hostility.46 Sex offenders, particularly rapists, tend to engage in other antisocial acts and tend to have a history of juvenile delinquency.47 Adjudicated rapists and child molesters do not differ from other offenders on antisocial characteristics,48 but antisociality is one

45. Antisociality indicators are highly heritable. E.g., Donna R. Miles & Gregory Carey, Genetic and Environmental Architecture of Human Aggression, 72 J. PERSONALITY & SOC. PSYCHOL. 207 (1997) (discussing twin and adoption studies on aggression, psychopathy, and socialization).


48. E.g., Vernon L. Quinsey et al., MMPI Profiles of Men Referred for a Pretrial Psychiatric Assessment as a Function of Offense Type, 35 J. CLINICAL PSYCHOL. 410 (1980).
of the best predictors of future sexual aggression among identified sex offenders.\textsuperscript{49}

Juvenile and adult delinquents tend to have a sexual history characterized by high mating effort.\textsuperscript{50} Although more research is needed, mating effort and antisociality appear to be intimately linked, and perhaps represent two aspects of the same phenomenon.\textsuperscript{51} Antisocial characteristics are probably necessary to a high mating effort strategy, because this strategy requires that males not compromise with females' preferences and often results in harm to others. Conversely, an antisocial strategy to achieve fitness-relevant goals likely interferes with parental effort. Thus, the search for the origin of individual differences in antisociality will likely provide clues in the search for the origins of variation in mating effort and the use of sexually coercive tactics.

Causes of Variations in Antisociality

Mealey, Rowe, and Vila,\textsuperscript{52} among others, have offered cogent and testable Darwinian hypotheses on the causes of variation in antisociality. Both conditional and alternative strategy\textsuperscript{53} models have been proposed, and thus far the latter model has received greater empirical support. Here we focus on the variations in an extreme pattern of antisociality and mating effort, psychopathy.

Psychopathic offenders are impulsive, deceitful, selfish, and irresponsible individuals who have very little remorse or guilt for their misbehaviors and little concern for the welfare of others.\textsuperscript{54} Compared to nonpsychopathic offenders, psychopathic offenders have more extensive criminal histories, are more prone to instrumental rather than emotionally laden reactive violence, are more likely to use weapons, are more likely to select strangers as victims, and are more likely to cause serious injury to their victims. They respond differently to institutional

\begin{footnotesize}\begin{enumerate}
\item See generally Delbert S. Elliott & Barbara J. Morse, Delinquency and Drug Use As Risk Factors in Teenage Sexual Activity, 21 YOUTH & SOC'Y 32 (1989), Daniel J. Flannery et al., Impact of Pubertal Status, Timing, and Age on Adolescent Sexual Experience and Delinquency, 8 J. ADOLESCENT RES. 21 (1993), Rowe et al., supra note 30. See also Lee Ellis, Relationships of Criminality and Psychopathy with Eight Other Apparent Behavioral Manifestations of Sub-Optimal Arousal, 8 PERSONALITY & INDIVIDUAL DIFFERENCES 905 (1987).
\item See generally-David C. Rowe et al., Sexual Behavior and Nonsexual Deviance: A Sibling Study of Their Relationship, 25 DEV. PSYCHOL. 61 (1989), Rowe et al., supra note 30.
\item In conditional strategies the development of antisociality depends on specific environmental cues. In alternative strategies the development of antisociality depends on genetically based individual differences.
\end{enumerate}\end{footnotesize}
treatment, and are much more likely to violate their parole or commit new crimes once they are released from an institution. They are especially more likely to commit new violent crimes.55

Psychopaths also differ from nonpsychopaths on behavioral, physiological, and neuropsychological measures. For example, psychopaths are less likely than other offenders to delay gratification in computerized learning tasks and they are more likely to perseverate in a task despite punishment. Psychopaths process emotional information differently than nonpsychopaths. They are less reactive to cues of distress or fear, and to aversive stimuli like loud sounds.56

Recent research in our laboratory suggests that psychopathy may not be a psychiatric disorder. Compared to nonpsychopathic offenders, psychopathic offenders do not show the signs of developmental instability generally associated with psychiatric (and other) disorders. For example, in one study we found that fewer difficulties occurred in the pregnancies and deliveries of children who became psychopathic offenders than of children who became nonpsychopathic offenders; in addition, psychopathic offenders scored lower on an index of morphological fluctuating asymmetry (perhaps the best indicator of developmental instability) than nonpsychopathic offenders. Psychopathic offenders were just

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as symmetrical as nonoffenders. Thus, the causes of psychopathy are unlikely to involve pathological neurodevelopmental processes.

Taxometric analyses suggest that psychopaths are not at the high end of a continuum of antisocial characteristics but rather represent a naturally occurring class of individuals. We and others have suggested that psychopathy is an adaptive life history strategy, one that may have evolved by frequency-dependent selection. Theoretically, psychopathy can be considered a life history strategy consisting of high mating effort, an aggressive and risky ("warriorhawk") approach to achieving social dominance, and frequent use of nonreciprocal and duplicitous (cheating) tactics in social exchange. This approach leads to a specific hypothesis regarding sexual aggression.

The high mating effort strategy hypothesis states that (a) whereas some men adopt a mixture of mating and parenting effort tactics according to circumstances, a small group of men adopt, as part of a generally antisocial lifestyle, a high mating effort strategy that relies on acquiring a large number of partners and invests very little in mates and offspring; (b) sexual coercion is only one of the tactics (along with charm, false promises, and deception) used by psychopaths to acquire multiple partners; (c) sexually coercive tactics are probably used when less coercive tactics are not successful with a particular woman, or whenever the costs of coercion are not too high. Thus, they use a high mating effort strategy due to an inability to compete in prosocial ways for resources and status, but rather as part of an alternative strategy for social competition. We expect that these men are not more likely to have anomalous sexual preferences, such as sadism or preferential rape, than nonpsychopaths, but we expect that they might be more sexually responsive to a variety of sexual cues (including less conventional cues) and less inhibited by women's cues of nonconsent.

II. RAPE PREDICTION

Two variables may predict predatory sexual aggression: psychopathy, as defined by instruments such as the Psychopathy Checklist-Revised, and a phallometrically measured preference for coercive and nonconsenting sex.

57. See generally Grant T. Harris et al., Criminal Violence: The Roles of Psychopathy, Neurodevelopmental Insults, and Antisocial Parenting (unpublished manuscript); Martin L. Lalumière et al., Signs of Developmental Instability Among Violent Psychopaths (unpublished manuscript).
58. See generally Grant T. Harris et al., Psychopathy As a Taxon: Evidence That Psychopaths Are a Discrete Class, 62 J. CONSULTING & CLINICAL PSYCHOL. 387 (1994).
60. See generally R.I.M. Dunbar et al., Conflict and Cooperation Among the Vikings: Contingent Behavioral Decisions, 16 ETHOLOGY & SOCIOBIOLOGY 233 (1995); Lalumière & Quinsey, supra note 5; Michael C. Seto et al., Deception and Sexual Strategy in Psychopathy, 22 PERSONALITY & INDIVIDUAL DIFFERENCES 301 (1997).
61. We are currently researching these ideas.
Rapists who are both psychopathic and sexually deviant are especially likely to commit new sexual offenses.\(^{62}\) The discovery of variables related to sexual offending and reoffending has allowed and guided the development of actuarial methods to predict rape and other violent acts.\(^{63}\) Psychopathy and sexual deviance are part of a recently developed actuarial instrument for the prediction of recidivism among sex offenders.\(^{64}\)

The Sex Offender Risk Appraisal Guide (SORAG) contains 14 variables,\(^{65}\) selected according to their relationship to violent or sexual recidivism among sex offenders (both rapists and child molesters), and scored and combined to maximize predictive accuracy in samples other than those used to develop the instrument. Total scores, which can vary from \(-26\) to \(+43\), are linearly related to the likelihood of violent or sexual recidivism.\(^{66}\) The accuracy of the instrument is high enough that, with a very high cutoff, a small number of truly dangerous offenders can be identified while wrongly identifying very few or no offenders as dangerous. Unfortunately, minimizing the number of offenders incorrectly identified as dangerous means that some truly dangerous offenders are missed. However, the impressive predictive accuracy of the SORAG (and of the Violence Risk Appraisal Guide, an instrument to predict violent or sexual recidivism among offenders in general) has clear implications for law and policy.

III. IMPLICATIONS FOR LAW AND POLICY

New theoretical and empirical endeavors can have practical, explanatory, or epistemological implications. Social and legal policies to enhance the protection of the community from highly recidivistic sexual predators can be substantially aided by actuarial instruments that accurately identify the likelihood with which


\(^{63}\) See QUINSEY ET AL., supra note 9 (discussing actuarial methods in the prediction of violence and reviewing the history of prediction of violence and the development of accurate methods).

\(^{64}\) Hanson & Bussière, *supra* note 49. In a recent meta-analysis, variables pertaining to sexual deviance and antisocial lifestyle were the best predictors of sexual reoffending. Variables pertaining to psychological distress did not predict sexual reoffending. The predictive validity of variables indexing mating effort has not yet been investigated. *Id.*

\(^{65}\) See QUINSEY ET AL., *supra* note 9, at 241–45 (discussing the details on the definition and scoring of the following variables, worded according to their positive relationship to recidivism: not having lived with both biological parents to age sixteen, elementary school maladjustment, history of alcohol abuse, never married or never lived common law, criminal history score for violent and nonviolent offenses based on the Cormier-Lang system, number of previous convictions for sexual offenses, history of sex offenses against people other than girls younger than fourteen, failure on prior conditional release, young age at index offense, diagnosis of personality disorder, no diagnosis of schizophrenia, and deviant results on phallometric tests).

\(^{66}\) For example, a score of \(-10\) is associated with a 9\% likelihood to reoffend violently over 10 years of opportunity; a score of \(+13\) is associated with a 59\% likelihood; and a score greater than \(+31\) with a 100\% likelihood.
an offender will commit a new sexual or violent offense. These instruments permit the balancing of community safety and offenders’ civil liberties that form the basis of sensible legal and correctional strategies. Actuarial instruments enable policymakers to concentrate expensive supervisory and treatment resources on the highest risk offenders.\textsuperscript{67} Although theories may suggest predictors to be included in actuarial instruments, the construction and evaluation of actuarial instruments are largely empirical engineering tasks rather than scientific, theoretical ones.

Darwinian theories are likely to have longer range implications for social policy to the extent that they lead to the identification and explanation of specific etiological and maintaining events. These may be environmental events that affect development or current behavior of all men, or genes that cause individual differences among men. In either case, understanding proximal mechanisms is more important than understanding ultimate causes for designing policy interventions.

Primary and secondary prevention of deviant sexual preferences such as pedophilia and preferential rape will likely depend on modifying early etiological events in utero. Here, as with a variety of neurodevelopmental problems, social policies are needed to assist pregnant mothers. Prevention of antisocial behavior, at least for nonpsychopathic children, depends on parental skills and resources and on community and school-based programs,\textsuperscript{68} particularly for high risk children. Intensive efforts will be required to modify the developmental trajectory of psychopathic children.

Turning to mating effort, a Darwinian view suggests that policies that facilitate male parental investment will decrease sexual coercion. More generally, policies that increase the immediate costs of mating effort and sexual coercion or decrease the opportunity to engage in them should result in a decrease in rape. Perhaps ironically, a central recommendation for crime reduction derived from sociological research\textsuperscript{69} is identical to that suggested by Darwinian thinking—namely, a policy designed to promote two-parent families and an increase in the number of caregivers relative to the number of children.\textsuperscript{70}

The use of accurate factors to identify high-risk individuals and the use of effective intervention and management strategies to lower risk cannot be divorced

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from a number of legal and social policy issues, such as procedural fairness, informed consent, and availability of services. Theoretical work will help to identify potential risk factors and interventions; legal and policy decisions will determine their use; and empirical and technological work will determine their efficacy.

The epistemological influence of Darwinian thinking on legal and social policy is less direct but perhaps in the long run more important. Dennett has called the idea of natural selection the “universal solvent” and “Darwin’s dangerous idea” because it explains human nature in mechanistic terms. Although all causal scientific theories of human behavior are at least implicitly deterministic in the same way, the determinism seems to be more obvious in Darwinism. In a Darwinian context, organisms do not choose the characteristics they have. All human behavior has proximate causes that work because of a history of natural selection (the ultimate cause). In the Darwinian conceptual scheme, a person no more freely chooses a behavior than a snail chooses to have no legs.

To a scientific determinist, then, the ideas of free will and criminal responsibility are unintelligible. It would make no sense to punish people because they were “bad” or “deserve it,” although it might make sense to punish them to deter them from doing something similar again, deter others by example, prevent vigilante justice, or prevent them from doing something similar. Deterministic causal theories of crime encourage a utilitarian approach to legal and social policy at the expense of a moralistic one.
