PERCEIVED CRIME SEVERITY AND BIOLOGICAL KINSHIP

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Two predictions concerning the perceived severity of crimes can be derived from evolutionary theory. The first, arising from the theory of inclusive fitness, is that crimes in general should be viewed as more serious to the degree that the victim is genetically related to the perpetrator. The second, arising from the deleterious effects of inbreeding depression, is that heterosexual sexual coercion should be perceived as more serious the closer the genetic relationship of victim and perpetrator, particularly when the victim is a female of fertile age. Two hundred and thirty university students estimated the magnitude of the severity of brief crime descriptions in three separate studies. In the first two, the biological kinship of victim and perpetrator was varied, and in the third, the hypothetical genetic relatedness of the subject and the fictitious victim was varied. All three studies found the linear relationships between biological kinship and perceived crime severity predicted by theory.

KEY WORDS: Crime severity; Inbreeding; Inclusive fitness; Kinship relatedness; Nepotism.

Evolutionary psychology seeks explanations for mental mechanisms and behavior with a selectionist conceptual scheme. This conceptual scheme deals with the ultimate causes of behavior in which genes associated with particular mental mechanisms and behaviors in ancestral environments

Received April 17, 1998; accepted July 15, 1998.

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1045-6767/99/$1.00+.10

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became more or less common as a result of their effect on the relative reproductive success of the organisms that carried them. In this connection, Daly and Wilson (1988a) have argued that human perceptions of self-interest are evolved tokens of the probable fitness consequences of alternative courses of action in historical environments. Crimes represent courses of action in which the interests of victim and perpetrator are in conflict. One's perceptions of the severity of particular crimes, therefore, may be related not only to the nature of the crime but also to the genetic relationship of the victim and perpetrator.

There is a surprising degree of consensus among people from different social classes and different societies on the relative severity of different crimes (Akman and Normandeau 1967; Wolfgang et al. 1985). Perceived seriousness is one of a number of elements determining societal responses to a particular crime, such as the offender's previous criminal history and the degree to which the offender lacks criminal intent. Wolfgang and colleagues (1985) developed a magnitude estimation scaling technique to measure perceived crime severity based upon Fechner's Law of psychophysics, which asserts that the logarithm of rated stimulus intensity is a linear function of actual stimulus intensity (e.g., Engen 1971).

A basic argument of inclusive fitness theory is that nepotistic behavior has been strongly selected for in ancestral environments because it promoted the representation of the actor's genes in future generations (Hamilton 1964). Committing crimes against relatives is, in a sense, the opposite of nepotism. Accordingly, homicide victims are relatively unlikely to be biologically related to their perpetrators (Daly and Wilson 1982, 1988b).

However, because the human condition has always been social, involving alliances and conflict among kin and non-kin, we should expect that notions of kinship are not only dependent upon the actors involved being one's own relatives. Other group-living primates, such as vervets, are aware of which other individuals are related to each other and use this information in interacting with non-kin (Cheney and Seyfarth 1990). One might think of kinship as an implicit premise of social contracts (Cosmides and Tooby 1992) and infer that people have behavioral expectations of any persons who are connected by these contracts. People should thus be sensitive to differences in the genetic relatedness of others and expect kinship-based variations in nepotistic behavior among them.

We conducted three studies to test the proposition that crime severity ratings are linearly affected by the genetic relationship of victim and perpetrator. The first study involved sexual behaviors among relatives, a situation involving conflict of interest with respect to reproductive strategy, while the second investigated conflict of a more general kind. These first two studies focused on victim-perpetrator genetic kinship. The third study involved both sexual and non-sexual crimes committed against subjects' own hypothetical relatives.
STUDY ONE

From a gene-centered selectionist view of evolution (e.g., Dawkins 1989), positive assortative mating represents an optimal strategy because genes essentially make copies of themselves. Evidence for assortative mating has been found for a wide variety of human characteristics (Thiessen and Gregg 1979). Assortative mating is likely based upon physical proximity and phenotypic resemblance (Rushton 1989). However, consanguineous matings are increasingly costly as the extent of genetic relatedness increases (Bateson 1983). As has been extensively documented, offspring of close relatives are more likely to be homozygous for harmful recessive genes and to suffer from a variety of genetic defects as a result (for a review see Sheper 1983). Most organisms, therefore, have inbreeding avoidance mechanisms (Pusey 1990; van den Berghe 1983). In humans, incest avoidance appears to be achieved by sexual indifference or aversion to the persons with whom or by whom one was raised, regardless of their genetic relationship (an idea originally proposed by Westermarck in 1921; Sheper 1983; but see Leavitt 1990). Incest regulations in human societies typically proscribe mating among relatives who share more than 25% of their polymorphic genes (Sheper 1983; Thornhill 1991; van den Berghe 1983).

In the American National Crime Survey, Wolfgang and colleagues (1985) had a large number of subjects rate the severity of a wide variety of crimes, including sexual crimes. Rape was rated as a very serious crime by both men and women; incestuous crimes, however, were not included in the survey, and the genetic or social relationship between victim and perpetrator was not varied. The purpose of Study One was to examine the effect of genetic relatedness between sexual partners on subjects’ perceptions of both sexual coercion and noncoercive sexual behavior. Other factors, such as the social relationship between victim and perpetrator, age of the victim, and nature of the sexual act, were also varied but their effects were expected to be superimposed on the linear effect of genetic relatedness.

Method

Subjects. Forty male and forty female first-year undergraduates at Queen’s University in Kingston, Ontario, participated in the study for course credit.

Questionnaire. A thirty-eight item questionnaire was constructed for this study. Following Wolfgang et al.’s (1985) magnitude estimation procedure, a modulus (standard comparison stimulus) was included (stealing a bicycle) and assigned a severity score of ten. Subjects were instructed to rate the severity of the other items by considering how many times more (or less) serious each of the other crimes or sexual interactions were than the
modulus. There were two practice crimes, a sexual and a nonsexual crime, both taken from the American National Crime Survey (Wolfgang et al. 1985). The perpetrator or protagonist was always described as an adult male when the event involved two persons.

The non-practice items were presented in a fixed, randomly determined order. There were 36 items, of one line of text each, four of which were taken from the National Crime Survey (a murder, a theft, an obscene phone call, and underage intoxication). The remaining 32 items presented the rater with sexual offenses and legal sexual interactions that differed across genetic relatedness, victim age, the nature of the sexual act, and, within the zero genetic relatedness condition, whether the nature of the social relationship proscribed sexual intimacy or not.

There were four levels of biological kinship. In the no-genetic-relatedness condition there was either an authoritative or proscribed relationship with the victim (teacher, stepfather, minister, priest, professor, or stepbrother) or not (involving protagonists who lived in the same apartment, lived in the same neighborhood, played on the same softball team, lived on the same street, were in the same park, or were in the same university class). The genetic-relatedness conditions involved third degree relatives (cousin-cousin), second degree relatives (uncle-niece or half-brother and half-sister), and first degree relatives (father-daughter or brother-sister). Within each degree of genetic relatedness, items included victims or partners who were either 11, 16, or 21 years of age. The sexual activity described alternated between sexual intercourse and fondling of the female’s genitals. This and the other two questionnaires described below are available from the first author.

Data Analysis. A one between-subject (Sex of Rater) and three within-subject (Genetic Relatedness, Victim Age, and Nature of Sexual Act) analysis of variance was conducted on the base 10 logarithm severity scores to which a constant of one had been added in order to avoid zero scores. The items depicting no genetic relatedness and no proscribed relationship as well as the four items from the National Crime Survey were not included in the analysis of variance. The Greenhouse-Geisser correction was employed to protect against heterogeneity of variance but did not alter the results. One male subject was discarded because his ratings were invariant.

Results

Figure 1 depicts the effect of genetic relatedness and age of victim on ratings of the severity of fondling and intercourse, collapsed over sex of rater. The results are collapsed over sex of rater because, although there was a significant interaction with age of victim, there was neither a main effect nor a four-way interaction involving sex of rater.
Figure 1. Mean log severity ratings of fondling and sexual intercourse as a function of age and genetic relatedness.
Crime severity ratings were positively associated with Genetic Relatedness, $F(3,231) = 19.33$, $p < .001$, and negatively with Victim Age, $F(2,154) = 103.12$, $p < .001$. Intercourse was rated as more serious than fondling, $F(1,77) = 8.80$, $p < .01$. Genetic Relatedness significantly interacted with Nature of the Sexual Act, with Victim Age, and with both of these variables; Nature of the Sexual Act also interacted with Victim Age. Simple effects analyses showed that Genetic Relatedness and Nature of the Sexual Act interacted at age 11, $F(3,231) = 7.69$, $p < .001$, and age 16, $F(3,231) = 9.86$, $p < .001$, but not at age 21.

Simple effects were further examined within each level of Victim Age and Nature of the Sexual Act. Genetic Relatedness was significant at each level of Nature of Sexual Act across each level of Victim Age, except for fondling at age 11.

A linear trend analysis was conducted at each level of Victim Age, for each level of Nature of Sexual Act. With respect to fondling, there were significant linear trends for age 16, $F(1,231) = 28.76$, $p < .001$, and age 21, $F(1,231) = 28.76$, $p < .001$, but not for age 11, as illustrated in Figure 1. With respect to intercourse, there was a significant linear trend for age 21 only, $F(1,231) = 107.85$, $p < .001$. In a more conservative test of the prediction, these trend analyses were repeated without including the no-genetic-relatedness condition; all of the linear trends were significant at each level of Victim Age for both types of sexual act except fondling at age 11.

The nature of the social relationship (whether proscribing sexual intimacy or not) also affected the ratings (see Figure 1). The items describing an authoritative relationship were compared to the items not describing such a relationship for each level of Victim Age and Nature of the Sexual Act in the condition of no genetic relatedness. All comparisons were significant except fondling at ages 11 and 16.

In accord with the National Crime Survey data, the murder item was rated the most serious of all acts, and the obscene phone call and underage intoxication the least.

**Discussion**

The prediction that the log mean severity ratings of sexual acts would be linearly related to degree of genetic relatedness was strongly supported for age 21 with respect to intercourse and at ages 21 and 16 with respect to fondling. In interpreting this effect it is important to remember that the zero relatedness condition included in the principal analyses of variance involved authoritative relationships that are ordinarily thought to prescribe sexual relationships. Even when the zero genetic relatedness condition was omitted, a significant linear trend was found for each variation of age and sexual act across genetic relatedness, except for fondling at age 11.
The exception of age 11 could be because the genetic relatedness of victim and perpetrator is irrelevant if the victim is not of fertile age. The overall level of seriousness of sexual interactions with the 11-year-old victims is likely a result of the position of trust or authority that the perpetrators were described as occupying (e.g., a teacher or stepfather), the abuse of authority being viewed as more serious with younger victims. In support for this view, comparisons between authoritative and nonauthoritative relationships showed no significant effect for 11-year-old victims.

These findings are consistent with the view expressed by Shields and Shields (1983) that kinship restrains male sexual aggression:

As relatedness between rapist and potential victim increases, the probability of rape is expected to decrease regardless of vulnerability. If related, her reproductive success, independent of any offspring she might share with the rapist, will be a component of his inclusive fitness. Because of their common genetic interests, he should be less likely to inflict a potential reproductive loss on her (1983:128).

The present results indicate that, if the loss of inclusive fitness occasioned by sexual aggression of one relative against another is the operative variable, such loss is recognized to occur among kin in general, not just one’s own kin.

STUDY TWO

We predicted that crime severity ratings should increase with the degree of genetic relatedness of victim and perpetrator and that this relationship would be stronger to the extent that the crimes involved personal injury because of the potentially greater cost in terms of inclusive fitness.

Method

Subjects. Forty subjects were recruited from an introductory psychology class at Queen’s University and received academic credit for their participation. Fifty were recruited through advertisements in a campus newspaper and received five dollars. Half the subjects were male. Three female subjects were discarded as statistical outliers, leaving 87 subjects.

Questionnaire. The protagonist or offender was specified at the beginning of the questionnaire as being a middle-aged man and the other person involved as being 21 years of age. Following the bicycle theft modulus to anchor subjects’ ratings, there were 54 crime descriptions. The first 48 items concerned offenses that differed according to the genetic relatedness of victim to perpetrator, crime type, crime severity level, and victim sex. Ge-
netic Relatedness had four levels: no relatedness, third degree relatives (cousin-cousin), second degree relatives (uncle-niece), and first degree relatives (father-child). All of the victims were described as knowing their perpetrators to minimize variation in social relationships.

Within each level of genetic relatedness, there were three Crime Types: sex crimes, crimes against the person, and property crimes. Within each type, there were two levels of Crime Seriousness. Sex crimes involved either nonconsensual sexual intercourse or nonconsensual fondling; crimes against the person involved murder or physical assault; and property crimes involved either a $1,000 or a $20 theft. Crime Seriousness was crossed by Victim Sex.

Four additional items dealing with sexual crimes or crimes against the person were described as occurring against a stepdaughter or a stranger to allow a comparison between different levels of social proximity and social involvement at zero genetic relatedness. Similarly, an item in which a man murders his identical twin was included to examine the effect of full genetic relatedness.

Five different random orders of the items were used, with the exception that an additional $1,000 robbery at gunpoint item from Wolfgang et al. (1985) and the identical twin murder items were always presented second to last and last, respectively.

Data Analyses. A one-between (Sex of Rater) and four-within factor analysis of variance was conducted on the logarithm of the severity scores to which a constant of one had been added. The within factors were Genetic Relatedness, Crime Type, Crime Seriousness Level, and Victim Sex. The Greenhouse-Geisser correction was used to protect against heterogeneity of variance but did not affect the results described below.

Results

Female subjects gave higher crime severity ratings than males, \( F(1,85) = 6.80, p < .05 \). Sex of Rater also interacted with Crime Type, \( F(2,170) = 3.90, p < .05 \), but with no other variables. There were large effects of Genetic Relatedness, \( F(3,255) = 35.58, p < .0001 \), Crime Type, \( F(2,170) = 291.56, p < .0001 \), Crime Seriousness Level, \( F(1, 85) = 250.13, p < .0001 \), and Victim Sex, \( F(1,85) = 41.84, p < .0001 \). Murder was rated highest, followed by rape, genital fondling, physical assault, theft of $1,000, and theft of $20. There were significant interactions among many of the variables.

Simple effects analyses revealed a significant main effect of Genetic Relatedness for sex crimes \( (p < .001) \), crimes against the person \( (p < .001) \), and theft \( (p < .05) \). Significant linear trends were found for sexual intercourse, \( F(1,255) = 7.75, p < .01 \), genital fondling, \( F(1,255) = 9.43, p < .01 \), and physical assault, \( F(1,255) = 18.46, p < .001 \), but not for murder and theft. These
linear trends remained significant when only related individuals were considered (i.e., when the no-relatedness condition was not included).

In descending order of seriousness ratings, the remaining crimes were: a male murders his identical twin, stepfather murders stepdaughter, male murders female stranger, male has nonconsensual sexual intercourse with female stranger, and stranger is robbed at gunpoint. Correlated t-tests within each crime type indicated that nonconsensual sexual intercourse with a stepdaughter was viewed more seriously than nonconsensual sexual intercourse with a stranger, t(86) = -2.93, p < .05.

Discussion

As in Study One, both nonconsensual sexual intercourse and genital fondling were seen as more serious crimes the closer the genetic relatedness of victim and perpetrator. The predicted significant linear trend of genetic relatedness emerged for physical assault but, contrary to prediction, not for murder. Murder, of course, received the highest ratings, and it is possible that a ceiling effect occurred despite the open-ended nature of the magnitude estimation procedure. This ceiling effect explanation does not apply to the theft condition, however, where the predicted effect also did not occur.

Although some of the predicted effects occurred and are extremely unlikely to be a result of chance because of the ordered nature of the predictions, not all of the findings were in accord with theory; in addition, the magnitude of the effects, particularly in comparison to the effects of the type of crime, was very small. One possible explanation for the small and inconsistent size of the predicted effects is that the crimes were described as being committed against someone else's relatives. In terms of inclusive fitness, one's own relatives are more relevant.

STUDY THREE

In Study Three, we sought to demonstrate the relationship between genetic relatedness and crime severity in a different manner. In the first two studies the relationship was found by varying the relationship between victim and perpetrator. In this study we varied the hypothetical relationship between the subject and the victim. Subjects rated the severity of two sexual crimes (rape and genital fondling) and one nonsexual crime (physical assault) committed by a stranger on a hypothetical female relative (sister, niece, or cousin) or female non-relative (friend). It was expected that the effects of genetic relatedness would be larger when the victims were presented as the subject's own relatives. In addition, subjects were asked to rate, on a separate page, how upset (i.e., angry, depressed) the crimes
would make them feel, because emotional reactions to these events might be less influenced by societal norms than the more abstract judgment of crime severity. Finally, subjects were asked if they actually had relatives of the kind specified in the crime descriptions, because evolved nepotistic psychological mechanisms might be evoked by having such relatives (cf. Buss 1995).

Method

Subjects. Forty-five male and 45 female subjects were recruited through an introductory psychology class subject pool at Queen's University. Subjects received course credit for their participation. One female and four male subjects' data were discarded because of missing data, invariant ratings, or failure to follow the instructions, leaving 85 subjects.

Questionnaire. Subjects provided a severity rating and a rating of their emotional reaction to each hypothetical scenario using magnitude estimation scaling. Separate questionnaires dealt with crime severity ratings and emotional reactions. The order of these questionnaires was counterbalanced, and there were five different orders of items within each of them. The victim in each case was described as being a 21-year-old female. Subjects then completed a third questionnaire concerning their age, sex, socioeconomic status, education, and family members.

Data Analysis. A one-between (Sex of Rater) and three-within factor analysis of variance was conducted on the logarithm of the severity and upset scores to which a constant of one had been added. The within factors were Genetic Relatedness, Type of Rating (degree of upset rating vs. perceived crime severity score), and Crime Type. The Greenhouse-Geisser correction was used to protect against heterogeneity of variance but did not affect the results described below.

Results

Figure 2 depicts the crime severity and ratings of how upset subjects would be as a function of genetic relatedness and type of offense collapsing over Sex of Rater. As can be seen in the figure, perceived crime severity and ratings of upset were parallel to each other and increased with degree of genetic relatedness, in accord with prediction.

Analyses of variance indicated significant main effects of Genetic Relatedness, $F(3,249) = 39.45, p < .0001$, and Type of Crime, $F(2,166) = 58.20, p < .0001$, but not Sex of Rater or Type of Rating. Genetic Relatedness interacted significantly with Sex of Rater, Type of Rating, and Type of Crime and participated in triple interactions with Type of Rating, Type of Crime, and Sex of Rater. The effects of Genetic Relatedness, collapsing over Sex of Rater, were significant for fondling, $F(3,249) = 16.52, p < .0001$, intercourse,
Figure 2. Mean log severity ratings of forced fondling, forced sexual intercourse, and physical assault as a function of type of rating and genetic relatedness.

F = 14.41, p < .0001, and assault, F = 16.97, p < .0001, for the severity ratings and were significant for the upset ratings, F = 18.88, p < .0001, F = 21.09, p < .001, and F = 25.25, p < .0001, for fondling, intercourse, and assault, respectively.

The predicted linear trends were confirmed for the seriousness ratings.
and ratings of upset as a function of Genetic Relatedness for both males and females. The largest linear effect was for ratings of upset as a result of assault among male subjects, $F(1,498) = 95.06, p < .0001$, and the smallest for the seriousness ratings of intercourse among female subjects, $F(1,498) = 5.88, p < .05$. All other linear trend tests were significant beyond the .001 alpha level.

The ratings of subjects who reported having a sister ($n = 37$) and those who reported not having a sister ($n = 48$) were compared. The severity ratings of subjects having a sister were expected to be higher and the linear trend to be stronger, but no differences were found.

Finally, a comparison was made of vignettes in which genetic relatedness between victim and perpetrator was varied (Study Two) with similar vignettes in which the hypothetical genetic relatedness of subject and victim was varied (Study Three). A total of 86 male and 86 female subjects estimated the crime severity of fondling, sexual intercourse, and physical assault involving an adult female at four levels of genetic relatedness. The severity ratings involving a crime committed against one's own hypothetical relative were expected to be higher than those involving an adult male and his related victim, but no significant differences were found.

Discussion

Study Three shows that subjects' ratings of crime seriousness increase with the degree that the victim is genetically related to them. The effect of genetic relatedness was once again smaller than the effect of crime type. The ratings of how upset the subject would be paralleled the ratings of crime severity, suggesting that subjects' emotional reactions to the crime might mediate their judgments of crime severity. It was of interest that the sensitivity of subjects' judgments did not depend on their actually having relatives of the type specified in the vignettes. Subjects' judgments of crime severity appeared to be equally sensitive to offender-victim relatedness and self-victim relatedness.

GENERAL DISCUSSION

As expected from Wolfgang et al. (1985), perceived crime severity was strongly affected by the nature of the crime itself. Nevertheless, in the first two studies, the closer the genetic relationship between the victim and perpetrator, the more seriously the "crime" was viewed. Because crimes are actions that negatively affect their victims' interests, the theory of inclusive fitness suggests that an individual should be quantitatively sensitive to the contradiction involved in people acting against the interests of their own genetic relatives. This sensitivity was general in the sense that it did not
depend upon the victim being a relative of the study subject but rather more general notions concerning how people should behave toward their own relatives.

In the third study, a similar linear relationship was found between perceived crime severity and the degree of the hypothetical relationship of the victim and the study subject. In this instance, there is a direct link between an action against a hypothetical relative's interests and subjects' own inclusive fitness. However, even here, the sensitivity of subjects to the degree of genetic relatedness between themselves and the victim appeared general in that it did not depend upon them actually having a relative of the type involved in the vignette.

Of course, the unsurprising finding that people favor their own relatives and believe that others should do the same offers no new support to an evolutionary account of human behavior in the sense that these findings can be explained without invoking the theory. One can argue that people are simply taught, both implicitly and directly, to favor their relatives and either that such learning generalizes to kinship relations more generally or that people develop expectations of how relatives treat each other from observation. This argument may well be correct, but it begs the question of why relatives should be favored in direct proportion to their genetic relatedness.

Some reviewers of this paper have suggested that the genetic relatedness results may be due to the demand characteristics of a within-subject design, in that repeatedly asking subjects to rate the seriousness of crimes committed by persons who vary in their genetic relatedness to the victim unduly focuses subjects' attention on this variable. It is likely that the within-subjects procedure makes genetic relatedness more salient than it would be in some other contexts. However, it is unclear why making genetic relatedness more salient would necessarily result in subjects showing a linear preference for relatives as a function of their degree of kinship.

Although the results of these three studies are consistent with the notion of an evolved domain-specific mental mechanism (cf. Cosmides and Tooby 1992; Gigerenzer and Hug 1992) designed to evaluate threats to one's inclusive fitness, they do not speak to the specific nature of the mechanism or to issues of ontogenetic development. However, given the similarity in the perception of crime severity over social class and societies found by Wolfgang et al. (1985), the sensitivity to genetic relatedness in judgments of crime severity may also be cross-culturally general.

Although we have no direct way of distinguishing measurement error from individual differences in this study, it is clear that there was considerable variation among individual subjects' ratings. Over the four levels of genetic relatedness, subjects showing maximum sensitivity would successively increase their severity ratings three times as the relationship became greater. However, data from Study Three showed that only 13 of 85 subjects successively increased their ratings of crime severity two or three
times over increasing degree of relatedness in the fondling scenario and 40
subjects showed flat profiles; the corresponding values for the intercourse
scenarios were 13 and 42, and for assault, 21 and 35. The linear relationship
obtained in these studies was thus statistical in nature, not the result of an
invariant property of individual subject’s ratings.

The inclusive fitness interpretation of these data can be put to a strong
test. According to the theory, a person’s perceptions of the seriousness of
crimes directed toward another individual should increase to the extent
the victim is genetically related to the person making the judgment or to
the extent that the victim is related to the perpetrator. Therefore, it follows
from the difference between maternal and paternal uncertainty that crimes
committed against one’s paternal relatives or where the victim and offender
are descended from the same male should be viewed as less serious
and should arouse less negative affect than crimes committed against
one’s maternal relatives or among persons descended from the same
female. These differences should be maximized in contexts of low paternity
certainty.

The first and second studies are based upon the third and fourth authors’ Hon-
our’s theses conducted at Queen’s University. The third study was supported by a
Research Fellowship awarded by the Correctional Service of Canada to the second
author. This research also was partially supported by a contract between the first
author and the Kingston Psychiatric Hospital. We wish to thank Martin Daly,
Grant Harris, Marnie Rice, and Michael Seto for their comments on an earlier
version of this paper.

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REFERENCES

Akman, D. D., and A. Normandeau
Criminology 7:129–149.
Bateson, P.

Buss, D. M.

Cheney, D. L., and R. M. Seyfarth

Cosmides, L., and J. Tooby

Daly, M., and M. Wilson

Dawkins, R.

Engen, T.

Gigerenzer, G., and K. Hug

Hamilton, W. D.

Leavitt, G. C.

Pusey, A.

Rushton, J. P.

Shepherd, J.

Shields, W. M., and L. M. Shields

Thiessen, D., and B. Gregg
Thornhill, N. W.

van den Berghe, P. L.

Wolfgang, M. E., R. M. Figlio, P. E. Tracy, and S. I. Singer