



Risk of multiple-offender rape–murder varies with female age

Todd K. Shackelford*

Division of Psychology, College of Liberal Arts, Florida Atlantic University, 2912 College Avenue, Davie, FL 33314, USA

Abstract

Previous work inspired by an evolutionary perspective found that reproductive-age females are at special risk for single-offender rape and rape–murder, relative to non-reproductive-age females. The current research replicated and extended these findings to multiple-offender rape–murder. The author obtained access to a national database of homicides and selected for analysis cases in which a female was (a) raped and murdered by at least two males previously unknown to her, or (b) murdered in the context of theft by at least two males previously unknown to her. The results supported an evolutionary psychological hypothesis and refuted a competing routine activities hypothesis, indicating that (a) young men are the primary perpetrators of multiple-offender rape–murder and theft–murder, (b) reproductive-age women are overrepresented among victims of multiple-offender rape–murder, but (c) are underrepresented among the victims of multiple-offender theft–murder. The discussion addresses questions generated by these findings that challenge a simple evolutionary perspective on rape. © 2002 Elsevier Science Ltd. All rights reserved.

Introduction

Every female is at risk for being raped by a male. Some females are at greater risk than are others, however. Working from an evolutionary perspective, Thornhill and Thornhill (1983) hypothesized and found that reproductive-age females (roughly thirteen to forty-nine years) are at greater risk for rape, relative to non-reproductive-age females. According to this perspective, reproductive-age females are at greater risk for rape precisely because they are capable of bearing offspring. Of those males in our evolutionary history who raped a female, males who raped reproductive-age females would have out-reproduced males who raped non-reproductive-age females (see Thornhill & Palmer, 2000; Thornhill &

Thornhill, 1983, 1992). According to this perspective, modern male psychology might include mechanisms “designed” by natural selection to motivate rape of reproductive-age females.

Extending this evolutionary logic, Wilson, Daly, and Scheib (1997) hypothesized that younger, reproductive-age females are overrepresented among the victims of rape–murder. Wilson et al. documented support for this hypothesis using one city-level homicide database (Chicago) and two national-level homicide databases (Canada and England/Wales). Reproductive-age women incurred greater risk of rape–murder, relative to non-reproductive-age women, across all three databases.

Younger women might be at greater risk for rape–murder not because of their greater reproductive value (expected future reproduction; Trivers, 1972) or fertility (current likelihood of conception), as hypothesized by an evolutionary perspective. According to a “routine activities” perspective (e.g., Mustaine, 1997;

* Tel.: +1-954-236-1179; fax: +1-954-236-1099.

E-mail address: tshackel@fau.edu (T.K. Shackelford).

Mustaine & Tewksbury, 1999; Ploughman & Stensrud, 1986), younger, reproductive-age women might incur greater risk of rape–murder because they spend more time around younger men. Younger men, in turn, comprise the demographic group that commits the majority of crimes, including rape, murder, and rape–murder (Daly & Wilson, 1988; Thornhill & Palmer, 2000; Wilson et al., 1997).

Wilson et al. (1997) pitted their evolutionary hypothesis of the greater risk of rape–murder incurred by reproductive-age women against a hypothesis derived from a routine activities perspective. Wilson et al. compared the age-dependent risk of rape–murder for females against the age-dependent risk of theft–murder for females. The majority of both types of homicide are committed by young men not previously known to the victim (Daly & Wilson, 1988; Wilson et al., 1997). According to a routine activities perspective, younger women should incur excess risk of theft–murder, for the same reason that they incur excess risk of rape–murder—they more frequently associate with younger men, the primary perpetrators of both crimes. According to an evolutionary perspective, in contrast, there is no reason to expect that younger women will be overrepresented among the victims of theft–murder. Older women instead might be specifically targeted by young men motivated by an interest in stealing valuable goods with minimal cost or risk of injury (Wilson et al., 1997).

Across all three homicide databases, Wilson et al. (1997) documented a very different age-dependent risk pattern for theft–murder, relative to the risk pattern for rape–murder. Younger women were underrepresented as victims of theft–murder, contrary to the hypothesis derived from a routine activities perspective. The greatest risk of theft–murder instead occurred for women over the age of sixty-five years. Wilson et al. concluded that younger women incur excess risk of rape–murder, and that this excess risk cannot be attributed solely to the more frequent association of younger women with young men—the demographic group responsible for the majority of crimes, including rape, theft, murder, rape–murder, and theft–murder.

Shackelford (in press) provided the first national-level replication for the United States of the findings of Wilson et al. (1997). Using the largest available national-level sample of homicides ($N > 429,000$), Shackelford documented that (a) young men commit the majority of rape–murders and theft–murders, (b) young, reproductive-age women are overrepresented among the victims of rape–murder, but (c) are underrepresented among the victims of theft–murder.

Shackelford (in press) and Wilson et al. (1997) tested hypotheses about the relationship of female

reproductive status to single-offender rape–murder. The present research was designed to replicate and extend this research to multiple-offender rape–murders or “gang rapes” of a female by two or more males previously unknown to the victim. Very little is known about multiple-offender rape–murder. In a recent review of over 100 years of empirical and theoretical research on rape–murder, Meloy (2000) addressed only single-offender rape–murder, with no reference to multiple-offender rape–murder. Meloy is not to be faulted for this omission, however, as the present author is not aware of any empirical research that specifically addressed multiple-offender rape–murder. A secondary goal of the present research, therefore, was to present the results of the first large-scale empirical study to specifically address multiple-offender rape–murder. The data presented are meager in depth and in breadth, but they are nevertheless empirical data that may inform future work on the risk of multiple-offender rape–murder.

Following Shackelford (in press) and Wilson et al. (1997), the current research pitted an evolutionary psychological hypothesis against an alternative hypothesis derived from a routine activities perspective. According to an evolutionary perspective, reproductive-age women will be overrepresented among the victims of multiple-offender rape–murder precisely because they are capable of bearing offspring. According to a routine activities perspective, in contrast, if younger women are overrepresented among the victims of this crime, this can be attributed to the more frequent association of younger women with young men—the primary perpetrators of most crimes, including rape and rape–murder.

Following Shackelford (in press) and Wilson et al. (1997), the current research tested these competing hypotheses by comparing the age-dependent risk of multiple-offender rape–murder to the age-dependent risk of multiple-offender theft–murder. According to a routine activities perspective, younger women should incur excess risk of multiple-offender theft–murder and multiple-offender rape–murder, because they more frequently associate with younger men, the primary perpetrators of both crimes. According to an evolutionary psychological perspective, in contrast, there is no reason to expect that younger women will be overrepresented among the victims of multiple-offender theft–murder. As for single-offender theft–murder, it is reasonable to expect that the lesser strength, for example, of older women might place them at greater risk of multiple-offender theft–murder.

To test these competing hypotheses, the author obtained access to a national-level database of homicides occurring in the United States that coded the

victim's age and sex, the number of offenders, the age and sex of the offenders, the relationship of the victim to the offenders, and the circumstance of the murder (e.g., rape, theft).

Method

Database

The United States Federal Bureau of Investigation (FBI) requests information from each state on criminal homicides. Supplementary Homicide Reports (SHRs) include incident-level data on every reported homicide, including the relationship of the victim to the offender (e.g., stranger), the victim's age and sex, the number of offenders, the age and sex of the offenders, and the circumstance of the homicide (e.g., rape, theft). The database analyzed for the present project includes SHRs for the years 1976 through 1994 (Fox, 1996), providing information on 429,729 homicides.

Procedures

Of the homicides recorded in the database, 247 were cases in which a female was raped by at least two males previously unknown to her. Of the 247 cases of multiple-offender rape–murder, 153 involved two males, 56 involved three males, 33 involved four males, and 5 involved five males. The average age of

victims was 33.9 years (S.D. = 20.1 years), ranging from eleven years to ninety-four years. The average age of offenders was 23.0 years (S.D. = 6.4 years), ranging from fourteen years to forty-eight years.

A total of 1581 homicides were cases in which a female was the victim of multiple-offender robbery ($n = 1322$), burglary ($n = 231$), larceny ($n = 6$), or motor vehicle theft ($n = 22$). Of the 1581 cases of multiple-offender theft–murder, 831 involved two males, 453 involved three males, 197 involved four males, 79 involved five males, and 21 involved six males. For all these theft–murder cases, the perpetrators included at least two males previously unknown to the victim. The average age of victims was 48.2 years (S.D. = 22.4 years), ranging from one year to ninety-eight years. The average age of offenders was 21.2 years (S.D. = 5.8 years), ranging from ten to fifty-two years. The author calculated age-dependent rates of multiple-offender rape–murder and multiple-offender theft–murder according to population estimates provided by the United States Census (available from the author upon request).

Results

The author first calculated the rate of multiple-offender rape–murder per million females per annum as a function of the age of the female victim. For this and the remaining age variables, the age groupings are presented in five-year intervals, following Shackelford

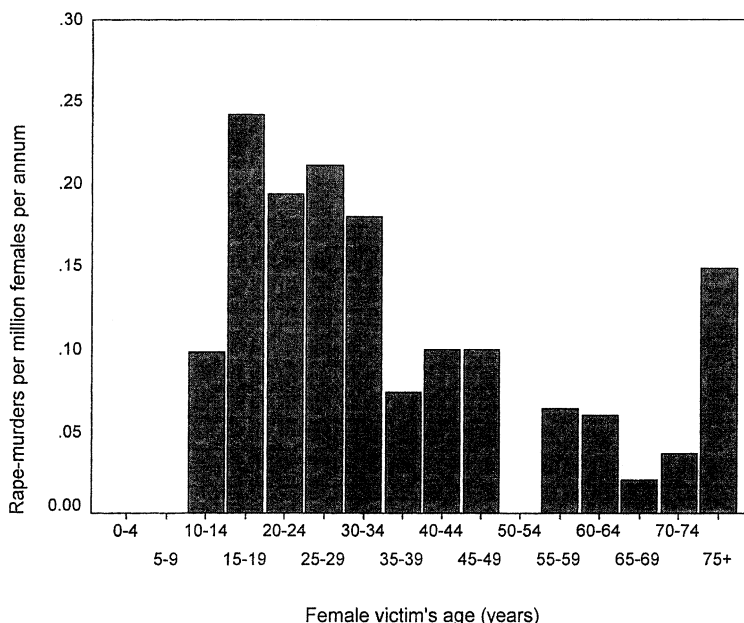


Fig. 1. Multiple-offender rape–murders per million females per annum as a function of female victim's age.

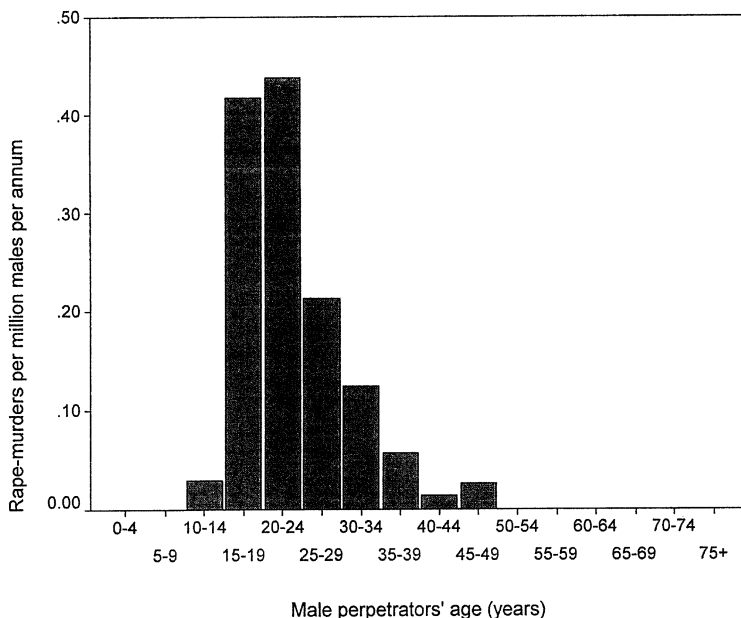


Fig. 2. Multiple-offender rape–murders per million males per annum as a function of male perpetrators' age.

(in press) and Wilson et al. (1997). Fig. 1 shows that younger, reproductive-age women were overrepresented among the victims of multiple-offender rape–murder. Among women less than seventy-five years, the risk of rape–murder peaked in the age group fifteen to nineteen years and then generally decreased thereafter. The risk of rape–murder for women aged

fifteen to nineteen years, for example, was about two and a half times greater than the risk of rape–murder for females aged ten to fourteen years and about five times greater than the risk of rape–murder for females aged fifty-five to fifty-nine years. The risk of rape–murder increased up to the age group fifteen to nineteen years and then generally decreased thereafter, but

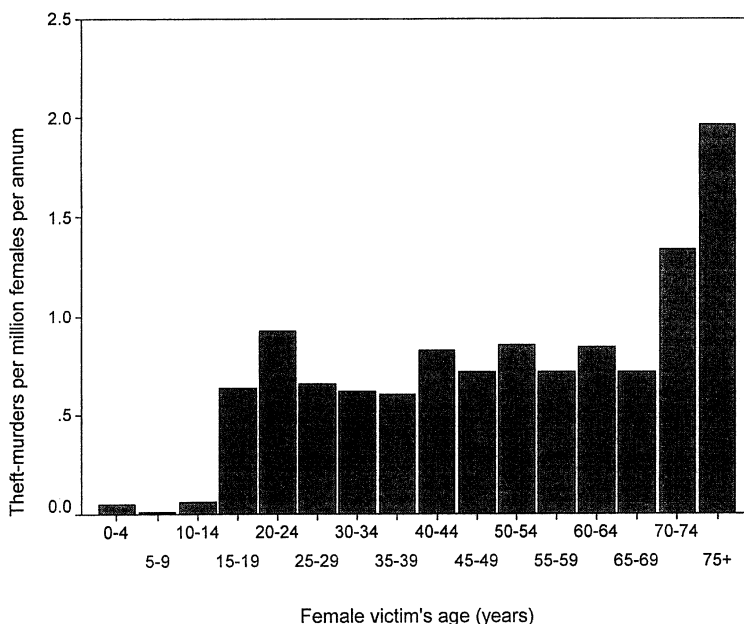


Fig. 3. Multiple-offender theft–murders per million females per annum as a function of female victim's age.

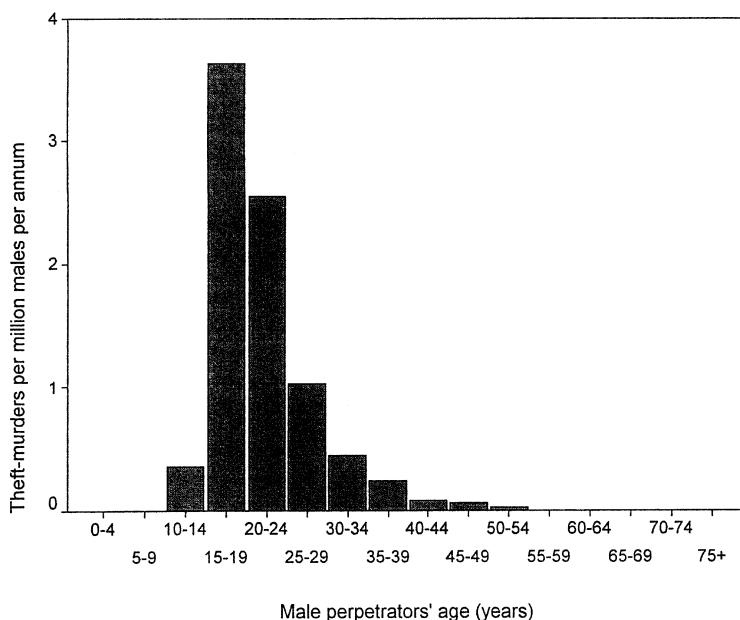


Fig. 4. Multiple-offender theft–murders per million males per annum as a function of male perpetrators' age.

there was a sudden and striking increase in the rape–murder rate for women seventy-five years and older. Women in this oldest age group, for example, were twice as likely to be raped and murdered than were women in the thirty-five to thirty-nine age group.

Fig. 2 displays the multiple-offender rape–murder perpetration rate as a function of the ages of the male perpetrators. Young men were clearly overrepresented among the perpetrators of rape–murder. The rate of rape–murder perpetration for men aged twenty to twenty-four years, for example, was about twenty times greater than the rate of rape–murder perpetration for males aged ten to fourteen years and for men aged forty-five to forty-nine years.

Fig. 3 displays the multiple-offender theft–murder perpetration rate as a function of the age of the female victim. In sharp contrast to the risk pattern shown in Fig. 1 for rape–murder, the rate of theft–murder generally increased with the age of the female victim. Younger, reproductive-age women incurred substantially less risk of theft–murder than did older, post-reproductive-age women. The rate of theft–murder victimization for women aged fifteen to nineteen years, for example, was about three times less than the rate of theft–murder victimization for women seventy-five years and older.

Fig. 4 displays the multiple-offender theft–murder perpetration rate as a function of the ages of the male perpetrators. This pattern of perpetration rates was nearly identical to that shown for male perpetration of multiple-offender rape–murder. Young men were overrepresented among the perpetrators of theft–mur-

der. The rate of theft–murder perpetration for men aged fifteen to nineteen years, for example, was about nine times greater than the rate of theft–murder perpetration for men aged ten to fourteen years and nearly forty times greater than for men aged forty-five to forty-nine years.

Discussion

Using the largest available national-level database of homicides, this research tested and found support for the evolutionary psychological hypothesis that young, reproductive-age women are overrepresented among the victims of multiple-offender rape–murder, and that this overrepresentation is not solely attributable to the greater association of young women with young men—the demographic group responsible for perpetrating the majority of multiple-offender rape–murders. Replicating the work on single-offender rape–murder conducted by Shackelford (in press) and Wilson et al. (1997), the current research documented that (a) young, reproductive-age women incur excess risk of multiple-offender rape–murder, and that (b) young, reproductive-age women are underrepresented among victims of multiple-offender theft–murder. Also replicating the work on single-offender rape–murder conducted by Wilson et al. and Shackelford, the current research documented that the same demographic group—young men—is responsible for the majority of multiple-offender rape–murders and multiple-offender theft–murders.

These results falsified the hypothesis derived from a routine activities perspective, which stated that reproductive-age women are overrepresented among victims of multiple-offender rape–murder because they are the demographic group that most frequently associates with young men. If that hypothesis was correct, then young, reproductive-age women should have been overrepresented among the victims of multiple-offender theft–murder just as they were for multiple-offender rape–murder, because the majority of both crimes are perpetrated by the same demographic group—young men. Young women, instead, were grossly underrepresented among the victims of multiple-offender theft–murder.

Non-reproductive-age females are raped, although the rates are lower than for reproductive-age females (Thornhill & Thornhill, 1983). The present research replicated this pattern for multiple-offender rapes that end in murder (see also Shackelford, *in press*; Wilson et al., 1997). Rape of non-reproductive-age females challenges a simple evolutionary hypothesis that proposes that rape is one strategy for genetic propagation. Previous research informed by an evolutionary perspective has not addressed why non-reproductive-age females are ever raped. Perhaps non-reproductive-age females who are raped display cues falsely signaling that they are of reproductive age. Pre-reproductive-age females who are raped, for example, might appear to be well developed sexually, displaying cues to fertility such as relatively wide hips (see Symons, 1995 for a review of research on the indicators of female fertility). Or perhaps men who rape non-reproductive-age females have differently functioning evolved psychological mechanisms than do men who rape reproductive-age females.

Shackelford (*in press*) documented a sudden and striking increase in the risk of single-offender rape–murder for women seventy-five years and older. The present research replicated this pattern for multiple-offender rape–murders. Post-reproductive-age females who are raped might display cues to fertility such as relatively smooth skin and full lips (Symons, 1995). This speculation cannot account for the sudden increase in the risk of multiple-offender rape–murder evident only for those women seventy-five years and older. This sudden increase was not evident in the work of Wilson et al. (1997) on single-offender rape–murder, using samples from Canada, England/Wales, and Chicago. This sudden increase in the risk of rape–murder for women seventy-five years and older was not evident in the Chicago database analyzed by Wilson et al. and, therefore, one cannot easily argue that the sudden increase in the rates of single-offender and multiple-offender rape–murder in the United States FBI SHR database reveals cultural differences

in the occurrence or reporting of rape–murder among the oldest women. Perhaps there do exist cultural differences in the occurrence or reporting of rape–murder among the oldest group of women, but these differences are not evident in the much smaller sample of Chicago homicides analyzed by Wilson et al. These speculations cannot be tested with the current homicide databases (including the databases analyzed by Wilson et al., 1997). If the oldest women in the United States do incur a sudden and striking increase in the risk of multiple-offender rape–murder, future research must attempt to identify the causes of this increased risk, particularly given the backdrop of a rapidly aging United States population.

In the present sample of multiple-offender theft–murders and in the samples of single-offender theft–murders analyzed by Shackelford (*in press*) and Wilson et al. (1997), a female's risk of theft–murder increased with age. Older women were substantially overrepresented among the victims of both single-offender and multiple-offender theft–murder. What might account for this replicable finding? Perhaps older women have more of the resources and material goods that young men want. Citing national-level data from Canada and from the United States, Wilson et al. noted that older women are not wealthier than younger women. Wilson et al. also noted that older women are not likely to be at greater risk for theft–murder by virtue of their routine activities. Wilson et al. noted that the well-documented fear of victimization reported by older women is likely to motivate these women to avoid risky situations, such as visiting places where young men congregate. Wilson et al. (p. 455) offered that the most likely explanation for the greater risk of theft–murder incurred by older women is that they "... are a relatively vulnerable group, both in the sense of literal fragility, and in that they are perceived by offenders as defenseless and hence low-risk targets." Wilson et al. (p. 455) noted that their relative fragility and greater attractiveness as low-risk victims would make older women "maximally vulnerable to sexual assaults, too, if the perpetrators of this crime were indiscriminate with respect to their victims' ages."

An important question that cannot be addressed by analyses of the current database is why rape ever ends in murder. On a simple evolutionary account, it does not make sense for a group of men to rape a woman and then murder her. If one of the rapists has impregnated her, she will not bear his offspring. Perhaps murders that are preceded by rape are less likely to be intentional than murders that are not preceded by rape. Perhaps the men intentionally murdered their rape victim, having determined that the potential costs of detection outweighed the potential reproductive benefits of an additional offspring.

The FBI SHR database and the databases analyzed by Wilson et al. (1997) do not provide the data necessary for testing these speculations about why a rape ends in murder.

This research was apparently the first large-scale empirical study of the risk to females of multiple-offender rape–murder. What we know now that we did not know before this research is that the risk pattern for females of multiple-offender rape–murder parallels the risk pattern for females of single-offender rape–murder. Younger women may be the special targets of both crimes, and this risk pattern is consistent with an evolutionary psychological perspective and refutes a routine activities perspective. There is much more to be learned about multiple-offender rape–murder, as well as single-offender rape–murder (see, e.g., Meloy, 2000). The current study does, however, present empirical data upon which future research and theory can be built.

In summary, the current research used the largest available national-level homicide database to document that reproductive-age females are overrepresented among the victims of multiple-offender rape–murder, and that this overrepresentation cannot be attributed solely to the greater association of young women with young men—the demographic group responsible for committing the majority of these crimes. These findings replicated the work of Shackelford (in press) and Wilson et al. (1997), who tested this hypothesis for single-offender rape–murders. The current results raise questions that challenge a simple evolutionary interpretation. These questions cannot be addressed by analyses of the current data but demand attention by researchers if we hope to reduce the risk of rape and rape–murder for all females.

Acknowledgments

The author thanks Martin Daly, Gregg LeBlanc, Rick Michalski, Margo Wilson, and Viviana Weekes-Shackelford for comments that improved this article.

References

- Daly, M., & Wilson, M. (1988). *Homicide*. Hawthorne, NY: Aldine de Gruyter.
- Fox, J. A. (1996). Uniform Crime Reports [United States]: Supplementary Homicide Reports, 1976–1994 [Computer file]. ICPSR version. Boston: Northeastern University, College of Criminal Justice [producer]. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor].
- Meloy, J. R. (2000). The nature and dynamics of sexual homicide: an integrative review. *Aggression and Violent Behavior, 5*, 1–22.
- Mustaine, E. E. (1997). Victimization risks and routine activities: a theoretical examination using a gender-specific and domain-specific model. *American Journal of Criminal Justice, 22*, 41–70.
- Mustaine, E. E., & Tewksbury, R. (1999). A routine activities theory explanation for women's stalking victimizations. *Violence Against Women, 5*, 43–62.
- Ploughman, P., & Stensrud, J. (1986). The ecology of rape victimization: a case study of Buffalo, New York. *Genetic, Social, and General Psychology Monographs, 112*, 303–324.
- Shackelford, T. K. (in press). Are young women the special targets of rape–murder? *Aggressive Behavior*.
- Symons, D. (1995). Beauty is in the adaptations of the beholder: the evolutionary psychology of human female sexual attractiveness. In: P. R. Abramson, & S. D. Pinkerton (Eds.), *Sexual nature/sexual culture* (pp. 80–118). Chicago: University of Chicago Press.
- Thornhill, R., & Palmer, C. T. (2000). *A natural history of rape*. Cambridge, MA: MIT Press.
- Thornhill, R., & Thornhill, N. W. (1983). Human rape: an evolutionary analysis. *Ethology and Sociobiology, 4*, 137–173.
- Thornhill, R., & Thornhill, N. W. (1992). The evolutionary psychology of men's coercive sexuality. *Behavioral and Brain Science, 15*, 363–421.
- Trivers, R. L. (1972). Parental investment and sexual selection. In: B. Campbell (Ed.), *Sexual selection and the descent of man: 1871–1971* (pp. 136–179). Chicago: Aldine.
- Wilson, M., Daly, M., & Scheib, J. (1997). Femicide: an evolutionary psychological perspective. In: P. A. Gowaty (Ed.), *Feminism and Evolutionary Biology* (pp. 431–465). New York: Chapman & Hall.