

## SHORT REPORT

# More “Bros,” More Woes? The Prevalence of Male Coalitions in Crimes of Robbery

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The crime of robbery is an act of procuring resources, which involves the threat, intent, or usage of violence. Robbery by coalitions may be particularly successful, given that alliances with other individuals confers considerable advantages in procuring and protecting relevant resources (Kenrick, Li, & Butner, 2003; van Vugt, 2009). Further, past work indicates that men typically commit more robberies than women. Here we examine this sex difference in the offender of robberies in light of the “Male Warrior Hypothesis” that predicts that men are more willing to initiate, plan, and participate in acts of intergroup aggression (van Vugt, 2009). Under section 343 of the Criminal Code of Canada, the definition of robbery includes the offender’s willingness to use threats or violence as means of committing the act (Criminal Code, 1985). Given the propensity for violence during the crimes of robbery, we hypothesize that the majority of robbery offenders would be male, and further, these acts would be primarily performed by men in coalitions. Guilty convictions from the province of Nova Scotia, adjudicated from the years 1996 to 2016, were examined to test the predicted sex and coalition status (i.e., solo, dyad, or group) differences. Results suggest that convicted robbery offenders are overwhelmingly male and act more often in dyads or groups than alone. Also, men perpetrating robbery acts alone are less likely to be violent toward the victims.

*Keywords:* coalitional psychology, robbery, male warrior hypothesis, aggression

The crime of robbery is an act of procuring resources, typically involving the threat or usage of violence. Robbery by coalitions, as opposed to single individuals, may be particularly successful, given that alliances with other individuals confer considerable advantages in procuring and protect-

ing relevant resources (Kenrick et al., 2003; van Vugt, 2009). For example, by working with a dyad or small group an in-group bias is elicited, whereby members of that particular ingroup are treated more benevolently than outgroup members (van Vugt, 2009). These ingroup members are afforded benefits through cooperation, such as resource sharing, territory-, and personal-protection, which leads to greater reproductive success. These advantages outweigh the associated risks with group cooperation, such as injury or death that may be incurred because of engagement in intergroup aggression (Tooby & Cosmides, 1988).

We propose that robbery in today’s society is akin to coalitional resource acquisition during the Environment of Evolutionary Adaptedness (EEA). During the EEA, social group living brought about new dynamics because of selective pressures involving group hunting and intergroup conflict. These pressures are argued to have had more of an effect on men than women

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We examined robbery records for Nova Scotia, Canada and found men commit (and are hence convicted) of more robberies than women, and are doing so most commonly in pairs and groups than alone. Further, robberies involving a single perpetrator result in less violence than when more than one offender is present. This study adds a much needed theoretical and evolutionary explanation to studies of robbery.

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stemming from the different life histories of the sexes, in relation to areas such as parental investment, paternity certainty, and the dynamics of women moving between patriarchal groups (van Vugt, 2009).

Sex differences in parental investment, and the associated costs and benefits of engaging in risky behaviors might be responsible for this sex difference in coalitional psychology. Compared with men, women's investment in their children is far more substantial; children are gestated, birthed, breastfed, and reared throughout infancy and childhood (Campbell, 1999; Trivers, 1972). Men may instead choose to invest (or not) in children beyond their genetic contribution. Because of these disparate investments, women are thought to be generally risk averse in situations involving a high likelihood of physical violence. The negative implications for physical injury or death affect not only the woman herself, but her dependants and future children as well (Campbell, 1999). Men use physical aggression much more frequently than do women (Archer, 2004; Campbell, 1999; van Vugt, 2009), possibly because the potential long-term costs of injury are much lower for men than women, when one considers their parental investment role. When women are using aggression, it is most commonly an indirect form, such as social gossip or derogation of a rival (Campbell, 1999). Men also benefit from rank and reputation within social communities, thereby the costs associated with risky competition and physical aggression are justified when there is an associated fitness (reproductive) benefit (Wilson & Daly, 1985). Overall, men are more willing to engage in risky behavior (Byrnes, Miller, & Schafer, 1999), and consequently, the sex of the robbery offender should be male more often than female, given that there is the threat of, or usage of violence.

Further, while both sexes cooperate, there are sex differences in the specific circumstances in which optimal cooperation occurs (Balliet, Li, Macfarlan, & van Vugt, 2011). For example, men tend to cooperate in groups more willingly and successfully than women, and become more cooperative over repeated interactions (Balliet et al., 2011). From an evolutionary perspective, perhaps this difference stems from evolved brain mechanisms that formed to navigate the social dynamics derived from experiences in coalitional hunting and intergroup conflict (van Vugt, 2009). Therefore, this evolutionary his-

tory provides another reason underlying why men may be more likely to commit the crime of robbery with other men versus alone: it is an expression of cooperation with a coalition.

Collectively, the lower cost of injury and a higher propensity to engage in physical aggression, combined with men's higher likelihood of successful same-sex group-level cooperation, lead to the "Male Warrior Hypothesis" (van Vugt, 2009). The Male Warrior Hypothesis posits that coalitional mechanisms are more prevalent among men than women because of the scarcity of reproductive-relevant resources, such as fertile mates, the advantages of group hunting, and men's higher involvement in intergroup warfare (van Vugt, 2009). One strength of this hypothesis is that it also carries over phylogenetically to one of human's closest relatives, chimpanzees, as males also form coalitions that engage in acts of intergroup aggression (van Vugt, 2009). Thus, men are presumed to engage in more complex cooperative acts, and reap the advantages afforded by their usage in areas such as warfare, territory-, resource-, and mate-acquisition, as well as the defending offspring, territory, mates, and resources.

Robbery as a pursuit of resources that often involves the threat or usage of violence, in addition to being a potentially cooperative act, allows for easy evolutionary analysis. Here we analyze conviction records of crimes of robbery from the Eastern Canadian province of Nova Scotia, adjudicated from the years 1996 to 2016. We test two hypotheses: that men commit more robberies than women, and that they do so in dyads and groups more often than alone. The first hypothesis is not novel (e.g., Miller, 1998; Rozum, Kotulan, & Tomasek, 2006), and hence, we sought to replicate findings of this sex differences in our database. Further, although we focus on men, we predict that when women do commit robbery, they do so as a solo act, not as a group. This is because of coalitional psychology being more prevalent among men than women, as well as male dyadic cooperation being higher than female dyadic cooperation (Balliet et al., 2011). We also examine whether dyads and groups perpetrate more acts of physical aggression against the persons they victimize, as compared with those acting alone. A 2006 report released by the Australian Institute of Criminology (Willis, 2006) cites the likelihood of injury to the robbery victim as higher when multiple offenders are present, with the likelihood

heightened when alcohol and firearms are involved in the crime. Also reported was that Australian victims of robbery were four times more likely to be injured by offenders working as a group, as compared with solo offenders (Willis, 2006).

### Method

A list of persons convicted of the crime of robbery in the province of Nova Scotia spanning the years 1996 to 2016 was constructed using online court files. These years were selected for two reasons. First, the online searchable database of court records before 2003 is incomplete, and cases become sparser the further back in time one searches. Second, it was decided that a 20-year time span was sufficient for the purposes of the current study.

Transcripts detailing the cases and court processes of the offenders were obtained from the official website of The Courts of Nova Scotia, where legal decisions are announced and made publicly available. Included in this study were convictions of robbery, armed robbery, attempted robbery, conspiracy to commit robbery, party to commit robbery, and counseling to commit robbery, as all confer involvement in a crime of robbery, and fall under Section 343 of the *Criminal Code of Canada* (1985). Note that the actual use of violence is not necessary for a robbery charge, according to this definition.

The records were read and coded for the sex of the offender, the status of offender during commission of robbery (solo, dyad, or group), the sex of the accomplice(s) to the offender, and the level of injury perpetrated against the victims of the robberies. Each robbery case was only counted once, even if there were multiple persons on the charge. However, if the same offender was to commit multiple separate robberies, each robbery was treated as its own case and coded accordingly. If any information was missing, it was coded as such and the case was still included to allow at least partial analysis. Care was taken to ensure no duplicate cases were included, and the data were double-checked for correctness. Charges of robbery that resulted in an acquittal were not included because of the legal complexities of establishing a credible sequence of facts. It is important to note that the court record database that we used to obtain the list of convictions is not inclusive of every single robbery case

in Nova Scotia. Some court decisions are presented orally, or a case file may be sealed because of a publication ban, such as those involving minors under the age of 18. The coded records were analyzed using SPSS version 23.

### Results

There were 83 male offenders and 14 female offenders, for a total of 97 different offenders, resulting in 100 cases of robbery. Regarding the first hypothesis, of the 100 robbery cases 15 were committed by a female offender, and the remaining 85 cases were committed by men. Binomial probability testing confirmed the first hypothesis, at  $p < .001$ ; all statistical tests were one-tailed given the directional predictions, and  $\alpha < .05$  accepted a priori as the criterion for significance.

To test the coalition aspect of the study, a  $\chi^2$  was used to examine the offender's sex and whether they committed the robbery solo, in a dyad, or in a group (see Figure 1),  $\chi^2(2) = 0.28$ ,  $p = .44$ , Cramér's  $V = .053$ . A total of 97 out of the 100 cases were valid for use. Among the male perpetrators, 34 (35.05%) committed robbery in a solo status, 24 (24.72%) committed the robbery in a dyad, and 25 (25.77%) committed robbery in a group status. Female perpetrators committed 5 (5.15%) robberies in a solo status, 5 (5.15%) committed the robbery in a dyad, and 4 (4.12%) committed robbery in a group status.

We went one step further and compared solo versus dyads combined with groups, given that both of the latter represent coalitions, and analyzed rates according to the offender's sex. There was no sex difference;  $\chi^2(1) = 0.14$ ,  $p = .36$ ,  $V = .038$ . However, with sex removed, the distinction between solo versus dyad and group combined was significant,  $\chi^2(1) = 3.72$ ,  $p = .027$ ,  $V = .20$ . For men, the combined totals of dyad and group status (49 cases) were higher than that of solo (34 cases), a finding which is significant,  $\chi^2(1) = 2.71$ ,  $p = .05$ ,  $V = .18$ . The small female sample size ( $n = 14$ ) leads to limitations in determining with confidence whether women are more likely to commit robbery solo, in dyads, or in groups. However, using this sample collapsed with dyad and group together (9 cases) and compared with solo (5 cases), the result is not significant;  $\chi^2(1) = 1.14$ ,  $p = .29$ ,  $V = .29$ .

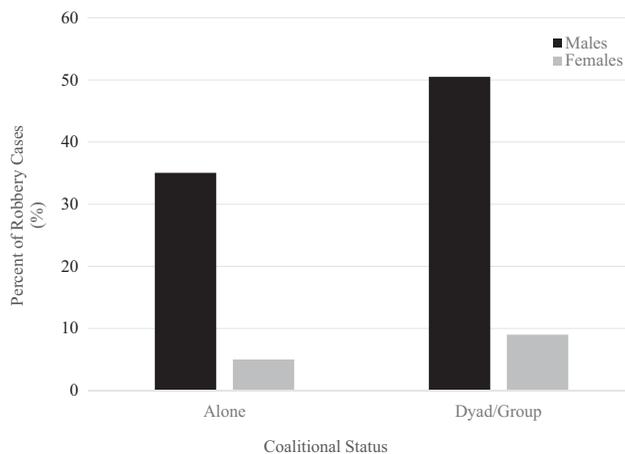


Figure 1. The coalitional status of robbery offenders in Nova Scotia (1996–2016).

A  $\chi^2$  test was used to analyze the coalitional status of robbery offenders with the sex of the robbery accomplices. Dyad versus group and the sex of the accomplice (female/male/mixed team) did result in a significant comparison,  $\chi^2(2) = 9.99, p < .001, V = .46$ . In the status of dyad the accomplice was male 88.5% (23 cases) of the time, with the remaining 11.5% (3 cases) female accomplices,  $\chi^2(1) = 15.38, p < .001, V = .77$ . In the status of group the accomplice was male 73% (16 cases) of the time, and for 27% (6 cases) the accomplices were mixed-sex,  $\chi^2(1) = 4.55, p = .018, V = .35$ . It is worth noting that for group, there was no case of all female accomplices within our sample, which lends support to the second hypothesis but again note the small female sample size. The prevalence of men as both offenders and accomplices further bolsters hypothesis one.

For the second hypothesis, we examined whether the coalitional status of the offender varied by the type of violence used against victims. In the solo condition, of the 33 valid cases, 6 resulted in injury to the victim (5 physical assaults and 1 homicide). We collapsed all forms of injury, assault, stabbing, and death into one variable to compare presence of violence to no violence, yielding  $\chi^2(1) = 13.36, p < .001, V = .63$ . In the dyads, with 26 valid cases, 15 resulted in violence toward the victim (11 physical assaults, 4 stabbings/shootings, and 1 homicide);  $\chi^2(1) = 0.62, p = .43, V = .15$ . In the groups, of the 26 valid cases, 13 resulted in injury to the

victim (10 physical assaults, 1 stabbing/shooting, and 2 homicides),  $\chi^2(1) = 0.00, p = 1.0, V = .0$ . When acting solo, violence was the lowest, but in cases of dyads and groups, there is a fairly equivalent likelihood of violence being used or not used. When the file is split by sex of the offender, the values minimally change and the pattern of significance remains the same for men only. No woman in the solo condition used violence, 2 women used violence and 3 did not in the dyad condition, whereas in the group condition, 2 women used violence and 1 did not. The small sample size did not lend itself to statistical comparison.

## Discussion

Our results show that men are more likely than women to be convicted of the crime of robbery, and that they tend to be within dyads or groups rather than acting solo. We support both of our hypotheses, using a sample of 100 persons convicted of robbery, from 1996 to 2016 in Nova Scotia. Our predictions rest on the tenets of the Male Warrior Hypothesis (van Vugt, 2009), whereby men more than women rely on cooperative networks, especially for physically violent contexts. The novelty in our study is not in the finding that men commit more robbery than women, but rather that the Male Warrior Hypothesis might provide the reason for this sex difference.

Previously, criminologists have focused on co-offending to understand the situations that lead to crimes. Alarid, Burton, and Hochstetler (2009) review how “predatory street crimes” such as robbery involve the possibility of victim resistance and hence are more likely to lead offenders to opt for an accomplice to “overcome the fear and accomplish the act” (p. 1). Although this explanation may be correct, it is proximate at best. Using the same logic, though, one might expect that an offender would have a higher likelihood of overcoming a victim who is resisting if they involved an accomplice, which adds support to the Male Warrior Hypothesis. Part of this hypothesis indicates that men engage in coalitional behavior because of the advantages of group hunting, for example, which readily applies in this context.

Do more “bros” equal more woes when it comes to crimes of robbery? When woes are equated with the probability of violence toward those victimized, the answer is yes. We found that men who have been convicted of robbery while acting solo are the least likely to have been violent to their victim, while men in dyads and groups were equally likely to use violence as to not use violence. More woes could also be defined as longer criminal sentences, given that increased violence toward victims means longer sentencing for offenders. In the current study, coalitional psychology is visibly present and may impact on the ways in which the offenders are committing robbery, whom they are choosing for accomplices, and the violence that they are willing to perpetrate to successfully commit the robbery.

Miller (1998) points out that with the exception of rape, robbery might be the most sex-differentiated crime in the United States. She explored motives and behaviors of 23 men and 14 women who were recently and currently active in committing robberies. She documented that men reported that they were far more motivated than women by financial and material gains and commit robbery because they feel strong economic pressure. One noteworthy difference revealed in the ethnographies is that women often target other women, while men typically target other men. When it comes to mixed-sex dyads or groups, men will usually refrain from robbing women. Miller’s explanation rests on gender theory, and she argues that men refuse to rob women as it will not result in

a demonstration of their masculinity, as compared with robbing other men. The cornerstone of the argument is that women are easier targets, less likely to be armed, and perceived as weaker than men. Although possible, this explanation is rather surface-level and instead, we argue this area may benefit from the input of researchers using an evolutionary perspective. For example, one could incorporate theories of female–female competition, such as Stockley and Campbell (2013) to determine why women may target other women.

One strength of the present study is that it relies on real-world, ecologically valid data, rather than self-report. Another strength is that it applies the power of the evolutionary perspectives framework to the growing area of forensic psychology. Other studies have done so (e.g., Buss & Duntley, 2011; Daly & Wilson, 1988; Wilson & Daly, 1997), including an edited volume (Duntley & Shackelford, 2008). However, common criminal issues such robbery remain understudied from the evolutionary perspective.

There are some limitations with the current research. One is that we examined crimes of robbery where people were caught. In an analysis by Statistics Canada of crime during the year 2010, it was estimated that the clearance rate of reported robberies was only 40% (Mahony & Turner, 2012). Moreover, when robbery involves illegal wares, such as drugs, victims may be less likely to contact the police for fear of self-incrimination.

Another limitation is that we did not include variables related to environmental and societal factors that may have possible affects on not only the rates of robbery, but the ways in which they are committed. For example, Nova Scotia has experienced a high rate of prescription pain pill addiction and abuse for several years, which may lead to increased desperation and hence, increased violence in robberies. Moreover, we relied on convictions covering a 20-year span, but given that Nova Scotia is a small province (i.e., populations approximately ranging from 909,282 in 1996, to 945,842 in 2016), a replication of the findings in larger, more urbanized areas are needed. In Nova Scotia there is less violent crime, organized crime, and gang violence than larger metropolis-like Canadian cities, such as Toronto or Vancouver, so perhaps

robbery crimes are also different in terms of the key variables. Further study is needed.

In conclusion, men charged with the crime of robbery are most often committing the act in dyads and groups as compared with alone. Further, when violence is perpetrated against the victims, it is most commonly done so when more than one male is present. Together, these findings support our hypotheses that were informed by The Male Warrior Hypothesis (van Vugt, 2009), and show the prevalence of coalitional psychology among men.

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