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Myths and Realities of Female-Perpetrated Terrorism

Abstract

This paper examines the backgrounds and social experiences of female terrorists in order to test conflicting accounts of the etiology of this offending group. Data on 222 female terrorists and 269 male terrorists were examined across eight variables: age at first involvement, educational achievement, employment status, immigration status, marital status, religious conversion, criminal activity, and activist connections. The majority of female terrorists were found to be single, young (aged < 35 years), native, employed, educated to at least secondary level, and rarely involved in criminality. Compared to their male counterparts, females were equivalent in age, immigration profile and role played in terrorism, but they were more likely to have a higher education attainment, less likely to be employed, and less likely to have prior activist connections. Our results clarify the myths and realities of female-perpetrated terrorism, and suggest that the risk factors associated with female involvement are distinct from those associated with male involvement.

Myths and Realities of Female-Perpetrated Terrorism

On 9 November 2005, a Belgium born convert to Islam named Muriel Degauque ran into an Iraqi police patrol and detonated a bomb that killed five people and injured many others. Degauque's attack is often reported as a 'wake up call' for forensic professionals not simply because she was the first European female to conduct such an attack, but because she was an educated, reportedly well-mannered young woman who came from a supportive family and community (Von Knop, 2007). Degauque's background contradicted widely held expectations about female involvement in terrorism, and it raised questions about how this type of offending might best be treated (Cunningham, 2003; Horgan & Braddock, 2010). Her case made clear how little is known about the risk factors associated with female-perpetrated terrorism.

When trying to build a systematic understanding of an offender group, it is useful to start with a description of 'what is' (cf. Eke, Seto, & Williams, 2011; Hickle & Roe-Sepowitz, in press; Putkonen, Weizmann-Henelius, Lindberg, Rovamo, Häkkänen-Nyholm, 2011; Storey, Hart, Meloy, & Reavis, 2009). One benefit of description is that it tests popular (mis-)conceptions about the kinds of personal backgrounds that characterize the offending group. For example, in contrast to early stereotypes, research has shown that males who engage in terrorism are typically well educated (Sageman, 2004), in regular employment (Krueger & Maleckova, 2003), and are as likely to be married as not (Pape, 2005). This kind of aggregate understanding may provide a firmer basis for evaluating individual cases and for theorizing about female terrorists in general. A second benefit of description is that it can test theories about why people engage in a particular crime. In their study of male Hezbollah terrorism, for example, Krueger and Maleckova found little evidence of a direct connection between education and militancy, thereby raising doubts about poor education as a risk factor for involvement in Hezbollah. In this

manner, an evaluation of ‘what is’ provides a foundation for additional efforts to understand the risk factors and intervention possibilities associated with female-perpetrated terrorism. A third, related benefit of description is that it provides insights into the social dynamics that promote individuals’ involvement in terrorist activities. This kind of insight is particularly relevant to terrorism because of its prevalence as a group-based offence that often requires community support for actors to be effective (Gill, 2007). Thus, an aggregate testing of ‘what is’ may provide clinicians and policy-makers a much-needed evidence base that can inform their future efforts to develop practice and policy.

Despite the value of description, most existing studies of female-perpetrated terrorism comprise discursive reviews or case studies that do not test prevailing explanations for female involvement. In their review of the literature, Jacques and Taylor (2009) identified only 3 out of 58 studies that contained any form of descriptive data. These three exceptions report demographic data on females who were involved in specific conflicts (e.g., Chechen conflict, Speckard & Akhmedova, 2006; ETA, Hamilton, 2007) or who held specific roles within a specific conflict (e.g., Palestinian suicide bombers, Schweitzer, 2006). Moreover, of the three studies, only Hamilton (2007) considered her data against data for male terrorists, which is arguably necessary if one wishes to identify the unique etiology of female-perpetrated terrorism (cf. Gannon & Barrowcliffe, 2012). Thus, while these exceptions have made some contribution to our understanding, their lack of comparison across conflicts, and their focus on description, leaves open a need for a comprehensive investigation of ‘what is’ in female-perpetrated terrorism.

We respond to this need here by testing eight hypotheses about the nature of female involvement in terrorism. These hypotheses relate to three interrelated explanations for

involvement that prevail in the current literature: first, that there is a vulnerable demographic who are susceptible to involvement; second, that social circumstances acts as a driver of involvement; and, third, that prior exposure to, or involvement in, criminality is a dominant precursor to involvement. Of the hypotheses advanced by these explanations, some have precedence because they either draw on research relevant to male terrorism (Horgan, 2008; Sageman, 2004) or because they map onto the static and contextual risk factors identified for other types of crime (e.g., sexual offences, Beech & Ward, 2004; Gannon, Rose, & Ward, 2008). Others, however, are at least partly rooted in public stereotypes about terrorists (Horgan, 2005). Thus, by testing these hypotheses, we sought to test prevailing accounts of the factors associated with female-perpetrated terrorism, while also dispelling some broader misconceptions about this offending group.

Explanations for Female-Perpetrated Terrorism

Many attempts to explain involvement in terrorism center on defining a ‘vulnerable demographic,’ that is, a set of static and contextual factors relating to the individual that increases the risk of offending (Horgan, 2008). For example, age is often hypothesized as a factor on the basis that youth may be associated with an absence of self-regulation, a search for personal identity, and a naivety that leaves individuals vulnerable to recruitment into terrorism (Shelley, 2008). In a similar vain, some accounts argue that uneducated women are a vulnerable demographic for terrorism, due to their ignorance and susceptibility to ‘brainwashing’ (Pape, 2005), or due to their belief that terrorism serves as the only way to earn respect (Pape, 2005). This focus on education is often linked with lack of employment. The argument for unemployment as a factor is that poverty or economic hardship forces people to ‘make a living’

through terrorism, which acts also to restore the loss of social identity that results from unemployment (Atran, 2003; Taylor & Lewis, 2004).

While these interconnected ‘vulnerable demographic’ hypotheses are plausible, there is good reason not to accept them at face value. Studies of these factors in male terrorist populations have supported the prediction that males are young in age (most are aged between 18-35 years; Ehrlich & Liu, 2002; Kimhi & Even, 2004; Sageman, 2004; Zedalis, 2004), but they have failed to find evidence to support the idea that males are poorly educated or more likely to be unemployed in comparison to their peers (Berrebi, 2007; Krueger & Maleckova, 2003; Sageman, 2004). More importantly, the evidence to support or refute these hypotheses for the female terrorist population is almost non-existent. One exception is Reinares’s (2004) finding that approximately 70% of female members of ETA were younger than 24 years of age. A second exception is Speckhard and Akhmedova’s (2006) finding that 17 of 26 Chechen female suicide terrorists had finished high school. However, while both of these studies make useful contributions, their focus on a specific terrorist group and, in Speckhard and Akhmedova’s case, a specific terrorist role, limits the extent to which they inform a characterization of female-perpetrated terrorism. For example, the Basque nationalist-separatist group Euskadi Ta Askatasuna (ETA) is often recognized as having a history of recruiting young members (Bott et al., 2009), opening up the possibility that Reinares’s finding is particular to this group. In this paper, therefore, we seek to provide a fuller test of the ‘vulnerability demographic’ explanation by testing three hypotheses: that the backgrounds of female terrorists will show a prevalence of being young, being uneducated, and being unemployed.

A second explanation that is often discussed when examining the etiology of terrorism relate not to the individual but to the social circumstances in which a terrorist finds him or

herself. A number of prominent authors have argued that a precursor for terrorism is disconnection from society, and that the vulnerabilities stemming from this disconnection (e.g., impoverished social support) are critical to understanding offending (Atran, 2003; Gottschalk & Gottschalk, 2004). For example, in his study of global male salafi, Sageman (2004) found that 70% of his sample joined the jihad in a country where they had not grown up. He argued that isolation, resulting from emigration to a new culture and environment, might often be a factor in attracting individuals to join a terrorist group. In a similar argument, other researchers have pointed to a shift in social group (e.g., through religious conversion) as something that creates a social isolation that acts as a precursor to terrorist violence (Mili, 2006).

As with the individual vulnerabilities, a number of studies have sought to test the importance of social isolation in explaining male-perpetrated terrorism. For example, the proposal that male terrorists are socially isolated is inconsistent with recent evidence suggesting that males are often married and active members of their family (Berrebi, 2007; Kimhi & Even, 2004). Conversely, however, Sageman (2004) found frequent conversion to a non-secular religion in his male salafi sample, with the resulting conversion prompting a change in the individual's social relationships. Thus, the role of social relationships in the etiology of male terrorism may be nuanced. Moreover, an isolated finding from Speckhard and Akhmedova (2006) suggests that it is unwise to assume the findings for male terrorists transfer to their female counterparts. They found only a few of their sample of female Chechen terrorists were married and, if anything, that there was an overrepresentation of widowers who turned to terrorism for revenge. This finding, coupled with the differences in social role found across men and women in societies where terrorism occurs (Eagly & Wood, 1999), suggests that it is important to determine the specific role of these factors in female-perpetrated terrorism. We therefore

examine the role of social circumstances by testing three hypotheses: that immigration, religious conversion and an absence of marriage will be prevalent in female terrorist life histories.

A third explanation that is common in existing accounts concern individuals' exposure to criminality, either in terms of their own prior offending or the activism and criminality of those around them. Building on early criminological research, a number of authors have considered the link between organized crime and the funding of terrorist activities (Makarenko, 2004; Shelley & Picarelli, 2006), as well as the extent to which early male delinquency may lead to later violence and terrorism (Bakker, 2006; Welfare & Hollins, in press). The perspective taken by these and similar accounts is that terrorism is a facet of a larger criminal lifestyle to which individuals arrive as part of a process of widening involvement (Horgan, 2008). Often associated with this perspective is the suggestion that family connections play a role in shaping engagement in terrorism, particularly in conflicts that have spanned over generations (e.g., in Northern Ireland). The emphasis is on normalization or habituation within communities (Mullins & Young, in press), which, while overlapping with the socially focused factors identified above, is more acute as a risk factor for female offending.

Although the importance of exposure to criminality within the family or social group is well established as a risk factor for offending in general, the evidence in relation to terrorism is largely anecdotal (Mullins, 2009). Critically, most of the available accounts focus on men rather than women, underpinned by an understanding of the divergent social roles played by men and women in the relevant societies, and the tendency for young men to socialize in gangs that become connected with criminality or terrorism (e.g., Oehme, 2008). This thinking is consistent with Sageman's (2004) finding that the majority of his male global salafi jihadists had peer links to terrorism, and that 14% became active in terrorist activities through their kin. Such finding

have often led to the assertion that family and peer involvement is an important precursor for female offending, particularly given the ‘family’ role often played by females in their communities (Eagly & Wood, 1999). However, to date, the only study of this factor among females found that just one third of a group of female ETA members had peers involved in terrorism (Hamilton, 2007). To determine whether or not Hamilton’s finding can be generalized across conflicts, we test the prevailing hypothesis that familial links to either activism specifically, or criminality in general, are prevalent in the female terrorist population.

As reviewed above, the extant literature continues to lack a clear, evidence-based understanding of the factors prevalent in the backgrounds of females who engage in terrorism. This is particularly true when female-perpetrated terrorism is considered in a broad sense across different conflicts and as distinct from, and something to be compared to, terrorism committed by male offenders. Given this lack of evidence, we now turn to examine the above predictions using a large and diverse sample female terrorists, and a comparison sample of male terrorists.

Method

Data

Data were information on eight variables relevant to the hypotheses for 222 female and 269 male terrorists. The male data were examined in order to provide a comparison group for the female data. These data were extracted from a set of archival biographical material obtained for each terrorist (see below). While archival material of this kind is susceptible to limitations such as bias reporting and the absence of experimental control (Silke, 2001), it has proven a valuable and effective method in forensic research, particularly where access to the offending population is difficult (cf. Alison, Snook, & Stein, 2001; Giebels & Taylor, 2009; Levine, Taylor, & Best, 2011; Sageman, 2004; Wilson, 2000).

Bibliographical material. The bibliographical material was derived from three sources. All three sources were in English, although translations of material originally written in other languages (e.g., books, newspaper articles, Internet sites) were also included. First, we searched well-known bibliographic databases (Applied Social Sciences Index and Abstracts, Medline, PsycINFO, Socio Abstracts and ISI Web of Knowledge) and the British Library catalogue for the reference words ‘female,’ ‘woman,’ ‘terrorist,’ ‘terrorism,’ ‘martyr,’ ‘suicide,’ ‘bomber,’ ‘guerrilla,’ and ‘revolutionary.’ The abstracts of the resulting articles were examined for references to terrorism, and where such references were found, the article was analyzed in full for details relevant to terrorist life histories. We also conducted equivalent searches of PhD theses using the databases PsycINFO and ISI Web of Knowledge. Second, the Bibliography, Footnote, and Reference sections of the resulting articles were examined for further un-captured articles, which we then obtained and integrated into the biographical material as before. We repeated this process of examining an article’s citations until no new unseen citations appeared within the article being examined. To complement this process, we also used Google Scholar, PsycINFO, and ISI Web of Knowledge to conduct forward citation searches, whereby we identified and subsequently examined the content of articles that succeeded and cited the original article.

Third, we conducted Internet searches by inputting the above reference terms into a popular worldwide search engine. In cases where the search returned a terrorist’s name, the resulting name was used to instigate a further search. In an effort to capture a variety of perspectives, information on the individuals was retrieved from websites compiled by research institutions, think-tanks, independent researchers, Western and non-Western media sources, websites that presented as sympathetic to an extremist position, and, where possible, the official

websites of the relevant groups. A number of websites were flagged repeatedly across the different searches (e.g., <http://www.memri.org>), and these websites were, as a result, revisited and examined for all of the identified cases. On occasion, not all of the websites generated by a search string were investigated. The decision to terminate the search procedure was made when no new information was added to the individual's biography for 50 search hits.

We sought to increase the reliability of the data through triangulation. Data triangulation is the use of multiple sources of information to provide cross-validation and the identification and dismissal of plausible rival accounts (Mathison, 1988). For example, interviews with family members can provide insight into the personality of an individual, their temperament and their possible motivations. This may be triangulated with media reporting on the individual's life, since media reporting is likely to draw on other sources of information and reflect a societal (rather than familial) perspective (Prentice, Taylor, Rayson, Hoskins, & O'Loughlin, 2011). In this project, data triangulation involved the first author ensuring that information in each of the biographies was evident in multiple independent sources. For example, research suggests that Western media tends to focus on personal aspects of female suicide terrorists with actions minimized and credibility and influence diminished. In contrast, the Arab press is freer of gender stereotypes and downplays personal aspects of female terrorists (Issacharoff, 2006). Thus, to balance Western media reporting on an individual, we collected information from non-Western sources (e.g., Al-Jazeera reporting) and Western media reports that incorporated Arab press releases (e.g., BBC monitoring). Similarly, we sought to counter-balance the potential bias toward positive significant findings in Western reporting by including information stemming from martyr videos (translated into English) and reports from pro-Palestinian websites. Searching this range of perspectives not only increased our confidence in the accuracy of the

information recorded, but it also enabled us to dismiss information when two or more sources contradicted one another.

Table 1 shows the frequency of female and male terrorists within the final dataset as a function of group affiliation. As can be seen from Table 1, terrorists within this dataset were involved in 13 conflicts underpinned by nationalist-separatist, social revolutionary and religious fundamentalist issues (Donohue & Taylor 2003). Some of the groups and associated conflicts have been active for decades, while others began more recently. The examination of females across multiple conflicts, rather than one specific conflict or one particular type of conflict, enables a level of analysis whose results speak at a general level to the offending group. If differences emerge at this general level, then they can be explored in the future through more detailed, conflict-specific analysis.

Variable coding. Table 2 outlines the criteria used to extract the eight variables from the biographical information. As can be seen from Table 2, all variables except age required the assignment of a case (i.e., terrorist) to one of several categories relevant to the variable. For example, the variable Education required each case to be assigned to ‘No formal education,’ ‘Primary education,’ ‘Secondary education,’ or ‘Tertiary education.’ In the case of the variables ‘Age,’ ‘Employment,’ ‘Education,’ and ‘Marital status,’ the categorization was rendered for the point at which the individual was first known to be involved in terrorism, either because they were known to have been recruited into the organization or because they undertook a terrorist act. The first author completed the variable coding by reading through the biographical information collected for each terrorist and extracting the information onto a datasheet. To ensure this coding was reliability, a second independent judge received an explanation of the coding scheme and then extracted the same information from 10 female and 10 male

biographies. The agreement between the judge and first author across the biographies was 100% for each of the eight variables. Consequently, given the clear and unambiguous nature of the variables (i.e., they were not requiring coder interpretation), the first author completed the remainder of the coding.

One of the difficulties of coding the biographical data in this way was that information was not always available. This meant that it was not possible to code every variable for all of the cases. For example, age at first terrorist act could only be discerned for 263 (54%) cases because it was not always possible to establish the age at which a terrorist first engaged. By contrast, information on immigration and religious background (and therefore religious conversion) was available for all cases, largely because it was routinely presented in biographical accounts of the terrorist's background. As a result, we restricted our comparisons to cases where there was evidence that allowed a positive coding of a variable (i.e., we did not infer a particular coding for a case based on the absence of information). For example, when examining family activism, we compared only those cases where there was evidence of family activism (e.g., her brother fought in Jihad) against those cases where there was clear evidence of no activism (e.g., the terrorist reporting that the family had no awareness or involvement). Similarly, we did not assign a level of education or the absence of education to a case unless there was information in the biography that allowed the coder to clearly assign one of the education categories. The final columns of Table 2 indicate the number and percentage of cases for which information on the eight variables was available.

Results

Vulnerable Demographic

Age. Figure 1 shows the age of first involvement in terrorism for the 101 females and 162 males for whom this data were available. The mean age of females within the sample was 22.6 years ($SD = 7.43$), which did not differ significantly from the mean age of males within the sample ($M = 22.2$ years, $SD = 6.14$), $t(261) = .47, ns$. The ages of the female terrorists ranged from 12 to 66 years, while the male ages ranged from 13 to 43 years. While these ranges are large, they correspond to the prediction that the majority of terrorists are young because 233 (83.8%) of all cases fall within the range of 16 to 35 years. Of the remaining 30 terrorists who fell outside this age range, 24 were younger than 16 years at first involvement and 6 were older than 35 years.

Education. Figure 2 shows the highest level of education achieved for 99 female and 143 male terrorists for whom education background was known. As can be seen in Figure 2, the majority of the females completed Secondary and Tertiary education, contradicting the notion that a lack of education is a prevalent characteristic of female terrorists. Indeed, this level of achievement is considerably higher than the 27.8% of Secondary and 14.3% of Tertiary education achievement estimated from worldwide data (Barro & Lee, 2001). Moreover, the positive relationship between educational achievement and the proportion of the sample suggests that there is a tendency for female terrorists to achieve a high level of education. This is also true for the male terrorists in the sample, since the differences across gender in the proportion of terrorists achieving Secondary and Tertiary education were not significant, $\chi^2s(1) < 1, ns$. As no previous research has examined education level across conflicts, we stratified the data across the 13 represented conflicts to examine diversity. The only conflict where female education is

different to the overall trend is in Nepal, where 2 out of the 5 female terrorists did not receive any formal education. Although the Nepalese sample in the current data is small, the results are consistent with the low cultural priorities put on female education in Nepal (Onesto, 2005).

Employment. Figure 3 shows the employment status of 121 female and 154 male terrorists for whom type of employment at first involvement in terrorism was known. As can be seen from Figure 3, in contrast to our prediction, 244 (92%) terrorists were employed or were still in full-time education when they first became involved in terrorism. There were higher rates of employment for men (72%) than for women (53%), $\chi^2(1) = 11.57, p < .01, \Phi = .21, 95\% \text{ CI } [.08, .33]$, and a non-significant trend toward more women than men being students (31% compared to 21%; $\chi^2(1) = 3.46, p = .07, \Phi = .11, 95\% \text{ CI } [-.01, .24]$). These percentages are comparable to available estimates of worldwide employment (International Labour Office, 2011), which are slightly lower for females (49%) and slightly higher for males (73%).

The conflicts in Chechnya and Iraq differ from the general trend of high employment. Unemployment among terrorists in Chechnya was high among men (16%) and women (9%), and unemployment among terrorists in Iraq was high among men (33%), which is consistent with both the length of the political instability in the two regions and the nature of the conflict that arguably affects higher numbers of the population. However, high levels of unemployment are not seen in other areas experiencing similar conditions (e.g., the Palestinian conflict), suggesting that these two conditions are not sufficient to explain variations in the employment status of female terrorists.

Social Isolation

Marital status. Figure 4 shows the marital status of the 119 female and 83 male cases for which marital status was known. As can be seen in Figure 4, in contrast to the prediction, the

females in our sample were as likely to be married as they were single. Specifically, 37% of terrorists were single (39 women and 35 men) and 38% were married (42 women and 35 men), and these proportions did not differ significantly across gender, $\chi^2_s(1) < 1$, *ns*. In coding terrorists who were not married, we distinguished those who were single from those who were divorced, engaged, widowed, or living with a partner. Analyses across these categories revealed no significant difference in the proportion of male and female terrorists who were in a partnership or engaged, $\chi^2_s(1) < 1$, *ns*. However, female terrorists were more likely to be divorced than men ($p = .016$, Fisher's exact test, $\Phi = .18$, 95% CI [.02, .21]), and they showed a marginally higher rate of widowhood ($p = .08$, Fisher's exact test, $\Phi = .13$, 95% CI [-.04, .20]). Consistent with our previous analyses, we examined differences in marital status across conflict groups. The majority of groups follow the general trend of equal numbers of single and married terrorists (i.e., within-group χ^2 across single and married terrorists were non-significant at $\alpha = .05$). The two marginal exceptions were the Latin American and Nepalese groups, who showed a tendency to comprise married rather than single women, $\chi^2_{\text{Latin American}}(1, N = 10) = 3.52$, $p = .06$, $\Phi = .15$, 95% CI [.03, .23], and $\chi^2_{\text{Nepalese}}(1, N = 7) = 3.54$, $p = .06$, $\Phi = .15$, 95% CI [.04, .21]. In line with Speckhard and Akhmedova's (2006) findings, there was also a higher rate of widowhood (19%) among the Chechnya females. Indeed, the cases in this group comprised 50% of all widowhood within the sample.

Immigrant status. To test the hypothesis that immigration is prevalent in female terrorists, we examined the number of immigrants within the dataset as a function of gender and group. Of the whole sample, only 9 (4%) of the female terrorists were immigrants, which is comparable to the current 3% that is estimated for immigration in 71 countries across the world (World Bank, 2011). Interestingly, the rate was higher among men, with 24 (9%) of the male

terrorists immigrating before involvement. Together, these immigrants were associated with six conflicts, namely, al-Qaeda (1 female, 6 males), ETA (1 female), European groups (1 female), IRA (7 males), Latina American groups (4 females, 7 males), and Palestinian groups, (2 females, 4 males). The prevalence of immigrants in al-Qaeda is unsurprising given the transnational nature of the group (Burke, 2004), while the high occurrence among Latin American groups stems from the fact that several Puerto Ricans in the sample emigrated to the US before becoming active.

Religious conversion. The numbers of converts present within the dataset were examined as a function of gender and group. A total of 4 women (2%) and 14 men (5%) are identified as converting to a particular religion. A further 3 women (1%) and 6 men (2%) were converts to a different strain of the same religion. Of the 4 direct female converts, 3 were affiliated to al-Qaeda and one with the Iraqi conflict. All 3 of the female converts to a different strain of an existing religion were involved in the Chechen conflict. These proportions of conversion are comparable with the 4.5% rate of conversion found in an analysis of religious conversion across 40 countries (Barro, Hwang, & McCleary, 2010), suggesting that conversion to a religion is not a defining factor in female terrorist etiology.

Exposure to Criminality

Criminal history. To examine the hypothesis that terrorist involvement stems from a criminal career, terrorist biographies were coded to indicate whether or not individuals were arrested for criminal activity prior to their terrorist activity. This analysis revealed little evidence of the anticipated connection between the two, with criminal activity noted in only 5 out of 491 cases (1%; from disparate conflicts within the male sample).

Activist families. Exposure to activism was measured at the family level using a yes or no variable, indicating whether or not the terrorist's family was also active in terrorism. Of the 248 cases for which activism were known, 80 (32%) were raised in activist families. Overall, a slightly higher proportion of these were men (34%) than women (30%). However, post-hoc analyses of the data show a more complicated relationship. Of the 80 individuals raised in an activist family, only 49 cases cited family influence as a motivating factor in the decision to carry out terrorist activities. For example, within the IRA, 3 out of the 21 male terrorists and 4 out of 11 female terrorists with an activist family cited family as an influence. Similarly, in the Latin American groups, 4 out of the 10 male terrorists, compared to 5 out of 6 female terrorists with an activist family stated family as a motivation.

As with previous analyses, group differences were found in the prevalence of activism among families. Compared to other conflicts, the IRA and the Latin American groups had the highest proportions of activism. Groups with low numbers of both male and female activist families included Aum Shrinryko, a group that did not exist 20 years ago (Kang, 2009) and the European groups, who were rebelling against the Nazi actions of their parents and resulting political climates (Becker, 1986). Animal and environmental terrorists, who constitute a relatively new and growing form of terrorism (Chalk, Hoffman, Reville, & Kasupski, 2005), also had low numbers of Activist Families. To examine the role of family influence in long running conflicts, we correlated the ratio of family activism (i.e., number of activists / number of no activism) with the approximate length of the conflict (i.e., 2011 minus the approximate date the group was formed, see Table 1). There was a positive relationship for female terrorists, $r = .36$, and male terrorists, $r = .41$, suggesting that the number of activist connections decreases with shorter conflict lengths.

Discussion

In this paper, we sought to test broad etiological hypotheses about female-perpetrated terrorism by analyzing key aspects of the backgrounds of females involved in a wide range of terrorist conflicts. By including a control sample of male terrorists, we were also able to differentiate characteristics specific to females from those common to both males and females. Our findings challenge some of the existing stereotypes of female-perpetrated terrorism as well as some of the hypotheses brought forward from research on other offending groups. For example, the characterization of a female terrorist as an isolated individual who lack attachment to a social group (Atran, 2003) was not consistent with the low rates of immigration and single status found within the female data. Similarly, the stereotype of female terrorists as uneducated (Pape, 2005) was not consistent with the positive relationship between the level of education achieved and the frequency of females who had achieved that level. Finally, the finding of high levels of employment in the current sample adds to evidence from studies of male-perpetrated terrorism that suggest that economic hardship is not a prominent risk factor for terrorism (Krueger & Maleckova, 2003).

Collectively these findings add to recent efforts to identify the ‘psychosocial circumstances’ (rather than the psychopathologies) that are common to male involvement in terrorism (Horgan, 2008). Indeed, a number of the factors examined in this paper showed similar patterns of prevalence across males and females. For example, we found parity in the educational achievements of female and male terrorists, with both typically completing secondary education or beyond. Perhaps more surprisingly, we also found very few instances of previous involvement in criminality among females and males. This absence of a link between criminality and terrorism contrasts with what is typically found for other types of crime (Mullins, 2009). Why

such a stark discrepancy? One possible that cannot be ruled out is methodological. If terrorists were unwilling to confess to further crimes, or if their criminal activity was hidden from family members who provided the biographical accounts, then this activity would not be recorded in our data. A second, more interesting possibility, however, is that criminality is not linked to terrorism. This may be because criminality is an undesirable characteristic for potential terrorists, given the undue attention it may attract from the authorities. Or, it may simply be that having a criminal career is not a significant precursor to terrorism (cf. female homicide offenders, Putkonen et al., 2011). This possibility is consistent with Rosenthal's (2008) argument that the link between terrorist and criminal careers may be from terrorist to criminal, not criminal to terrorist.

Despite the similarities between male and female terrorists, it would be a mistake to view their etiology as equivalent. Other risk factors we examined showed significant differences across gender, reinforcing the argument that it is important to understand terrorism in gender-specific terms. Compared to their male counterparts, females were less likely to be in employment, they were less likely to be converts, and they were less likely to be immigrants. In relation to marriage, we also found that women were more likely to be widowed or divorced compared to their male counterparts. Collectively, these differences put forward an etiology for females that more heavily emphasizes individual rather than collective (i.e., group) engagement in terrorism. For example, our findings are consistent with the high rates of widowhood and divorce found in Speckhard and Akhmedova's (2006) study of female Chechen suicide terrorists, and lend support to their theory of revenge motivations for female Chechen terrorists.

Finally, of course, our data did not discredit all existing accounts of female-perpetrated terrorism. One area in which our data are consistent with previous accounts is in relation to age.

We found that approximately 84% of our sample were aged between 18 and 35 years, which is consistent with the idea that terrorism, like many other types of offending, is a ‘young persons game.’ (Kanazawa, 2003). Interestingly, however, there remained a small minority of female and male terrorists who were aged over 35 years. This wide range of ages is greater than the more restricted ranges found in smaller male samples (Pape, 2005; Zedalis, 2004), but it is consistent with Berrebi’s (2007) study of a large sample of 335 Palestinian terrorists. Thus, it appears that with larger samples comes greater inclusion, which will be important in testing explanations of terrorism engagement.

A second area in which our data support prevailing accounts is in relation to peer activism. Almost one-third of the female terrorists in our sample had family connections to terrorism, suggesting that activism amongst kin may play a role in the involvement of some females. However, the extent to which this is true appears to depend on at least two factors. The first is evidenced by the fact that not all cases cited family activism as a motivation factor in their engagement in terrorism, which leaves open the question of what factors moderate the influence of activism. The second is that the influence of activism on female involvement depended, perhaps not unsurprisingly, on the age of the conflict. This finding emphasises the importance of social and historic circumstances in people’s engagement in terrorism, but it also demonstrates the possibility of finding dimensions that can help us understand differences across multiple conflicts.

Although this study is the first large-scale investigation of female-perpetrated terrorism, the nature of the data and the type of analyses conducted leave open a number of weaknesses. One limitation stems from the fact that the data were from secondary sources. While every attempt was made to include as many data sources as possible, and to ensure the validity of the

data through triangulation, there remains the possibility that the data were subjected to reporting bias. One particular bias that will influence this paper is that the actions of women are emphasised for journalistic purposes, owing to the fact that society does not relate violence to women (Jacques & Taylor, 2008). However, if this were the case, we might expect to find that the data exaggerated, or at least confirmed, many of the stereotypes about female motivations for engaging in terrorism. Our findings have provided very little support for such hypotheses, suggesting that the data have not been exaggerated in this way.

A second limitation of this research stems from the fact that the sample of male terrorists, although matched wherever possible by group affiliation, was not an exactly matched sample. Our decision to take this approach was based on the assumption that providing the best representation of male and female terrorist backgrounds would provide the least biased, broad picture of this offending group. However, this approach may of course have introduced error into the comparisons of the analysis, since difference may relate to variations across conflicts as much as variations across gender. Given the large number of cases used in this study, and the variety of sources referenced, this source of error should be minimised. But it is certainly something that needs to be addressed by more detailed research into females' roles in the various conflicts.

A third limitation of this research stems from the scope of the variables examined. Our sampling of eight variables, although guided by theory and past research, provides only a snapshot of the range of factors that may influence an individual's involvement in terrorism. Of course this sampling was necessary to make the research tractable, just as eyewitness studies consider the effect of only a small number of factors on recall (e.g., co-witnesses, Levett, in press) or deception studies consider a fraction of the possible cues to deceit (e.g., ten Brinke,

MacDonald, Porter, & O'Connor, in press). However, it leaves open the possibility that other factors may influence female involvement significantly. Future examination of these factors may lead to alternative conclusions about the value of the explanations. For example, more detailed research on the role of social networks outside of families (cf. Bourman, de Ruiter, & Schene, 2010) may demonstrate a greater role for social influences. Similarly, a more detailed investigation of individual differences in affective and cognitive process (cf. Hayes & O'Reilly, in press) may give greater credence to the vulnerable demographic explanation.

This paper has shown that female terrorists vary considerably in their socio-demographic characteristics, and that those characteristics do not always fit the media stereotypes of female-perpetrated terrorism nor the expectations set out by studies of male terrorism and studies of other crime types. The etiology mapped out here can now be further refined by results from primary sources, such as in-depth interviews, and by more detailed comparisons against country-level data on demography and expectations about the role of females in society. Thus, as with other offending groups (Skeem & Monahan, 2011), the results presented here can inform future treatment and research efforts by providing a basis for understanding the nature of female involvement.

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Table 1

Numbers of Male and Female Terrorists by Group

Conflict	Terrorist Groups	Date formed ¹	Female	Male	Total
Al Qaeda	Al Qaeda, Al Qaeda in the Islamic Maghreb	1985	8	14	22
Animal and environmental rights	Animal Liberation Front, Earth First, Earth Liberation Front, SHAC-7	1976	10	18	28
Basque	Euskadi Ta Askatasun	1959	24	2	26
Chechnya	Groups acting for Chechen independence, including those allied to al-Qaeda	1998	23	28	51
Europe	Baader-Meinhof group, Movement Second June, Potere Operaio (Worker Power), Prima Linea, Red Brigades	1968	30	34	64
Iraq	Groups acting to end the occupation of Iraq	2003	6	6	12
Ireland	IRA, pIRA, rIRA	1922	34	66	100
Japan	Aum Shinriyko	1984	2	9	11
Latin America	CRS, EPL (Popular Liberation Army), FARC, Puerto Rican Independistas	1964	32	32	64
Nepal	Communist Party	1996	16	15	31
Palestine	Al Qassam Brigades, Fatah, HAMAS, PFLP (Popular Front for the Liberation of Palestine), PLF (Palestine Liberation Front), PLO (Palestinian Liberation Organisation)	1959	29	36	65
Sri Lanka	Liberation Tigers of Tamil Eelam (LTTE)	1976	2	9	11
Telengana	Communist Party	2004	6	0	6

¹ Date on which the terrorist group was formed, as recorded in the University of Maryland's Terrorist Organization Profiles (see http://www.start.umd.edu/start/data_collections/tops/). Where multiple groups are associated with a conflict, the earliest known group formation is recorded.

Table 2

Measurement Criteria for the Demographic Variables

Variable	Categories	Coding Definition	Number of Cases with Information	
			Female	Male
Age	0-99 years	Coded as the year in which an individual was recruited into terrorism or first active as a terrorist, taking the earlier of the two when both were available	101 (45%)	162 (60%)
Education	No formal education; Primary education; Secondary education; Tertiary education	Coded as the highest education level completed or being actively undertaken at first involvement in terrorism. Tertiary education refers to all college and university based further learning courses	99 (45%)	143 (53%)
Employment	Unemployed; Student Employed;	Coded as an individual's employment status at first involvement in terrorism.	111 (50%)	154 (57%)
Marital Status	Single; Married; Divorced; Widowed; Engaged; With partner	Coded at first involvement in terrorism. Categories were exclusive so an individual coded as 'engaged' would not also be coded as 'with partner'	119 (54%)	83 (31%)
Immigrant status	Present; Absent	Coded if the individual lived and worked for a substantial time in a country other to their own	222 (100%)	269 (100%)
Conversion to religion	Direct conversion; Conversion to a different form of the same religion	Coded only when an individual converted into a particular religion, and excluded changes in levels of practice	222 (100%)	269 (100%)
Criminal history	Present; Absent	Coded with evidence of criminal activity irrespective of whether or not the individual was arrested or charged. This	222 (100%)	269 (100%)

		did not include incidents in which the individual was arrested whilst campaigning or supporting their cause		
Activist	Present; Absent	Coded when individuals were not merely influenced by family members, but brought up by an 'activist family'. We defined an activist family as one that regularly shows outward support for a terrorist group, encourages younger members to take action, and often contains other members who are terrorists. We considered the family unit as comprising grandparents, parents, siblings, brothers and sisters of the parents (i.e., uncles, aunties), and cousins.	116 (52%)	132 (49%)
Family				

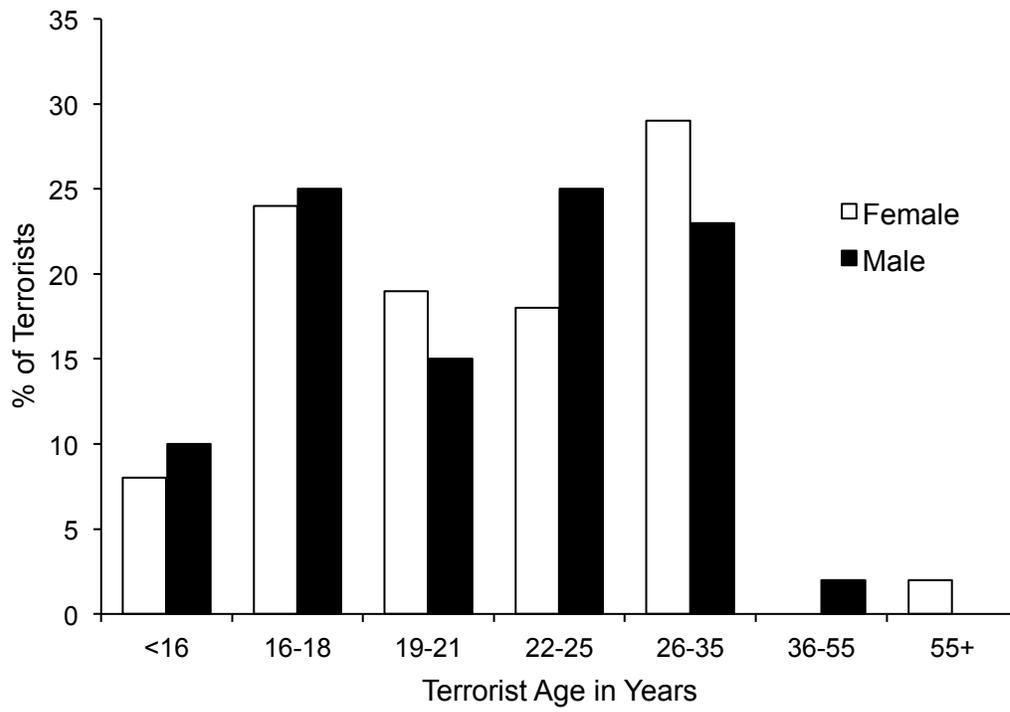


Figure 1. Terrorist age as a function of gender

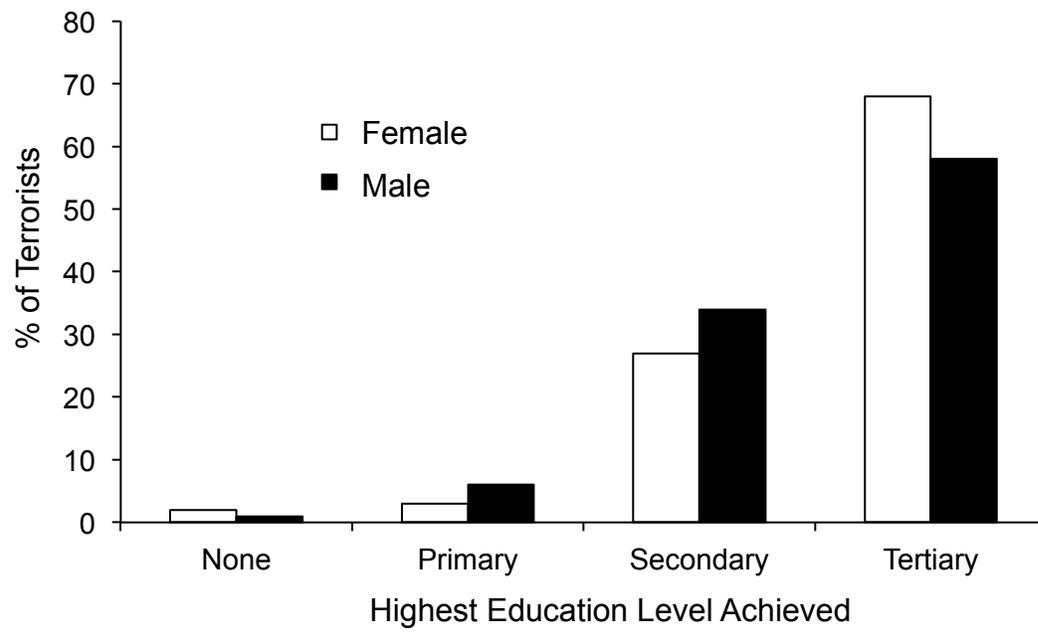


Figure 2. Highest education level achieved as a function of gender

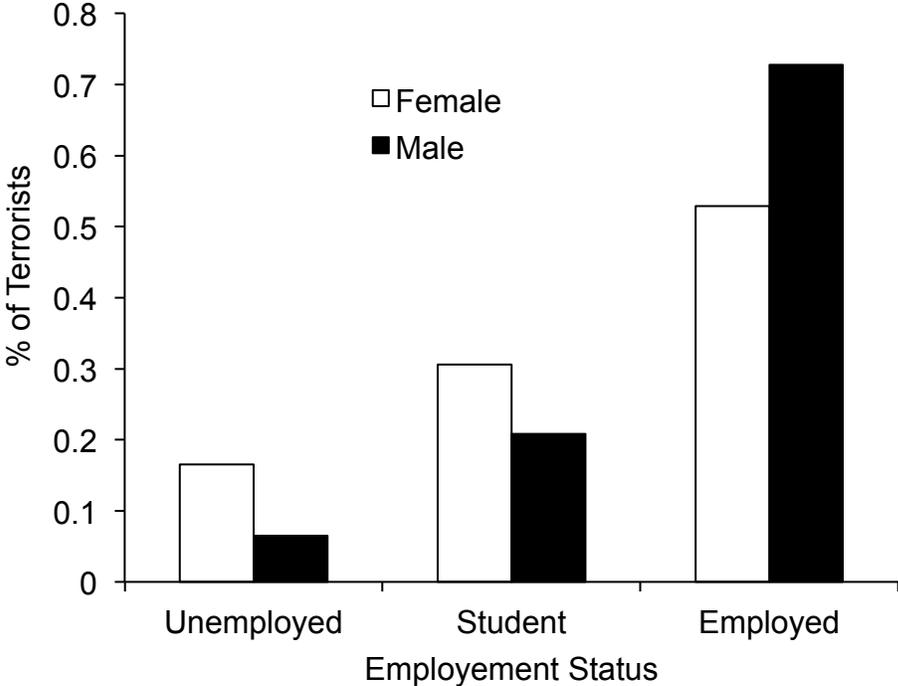


Figure 3. Employment status as a function of gender

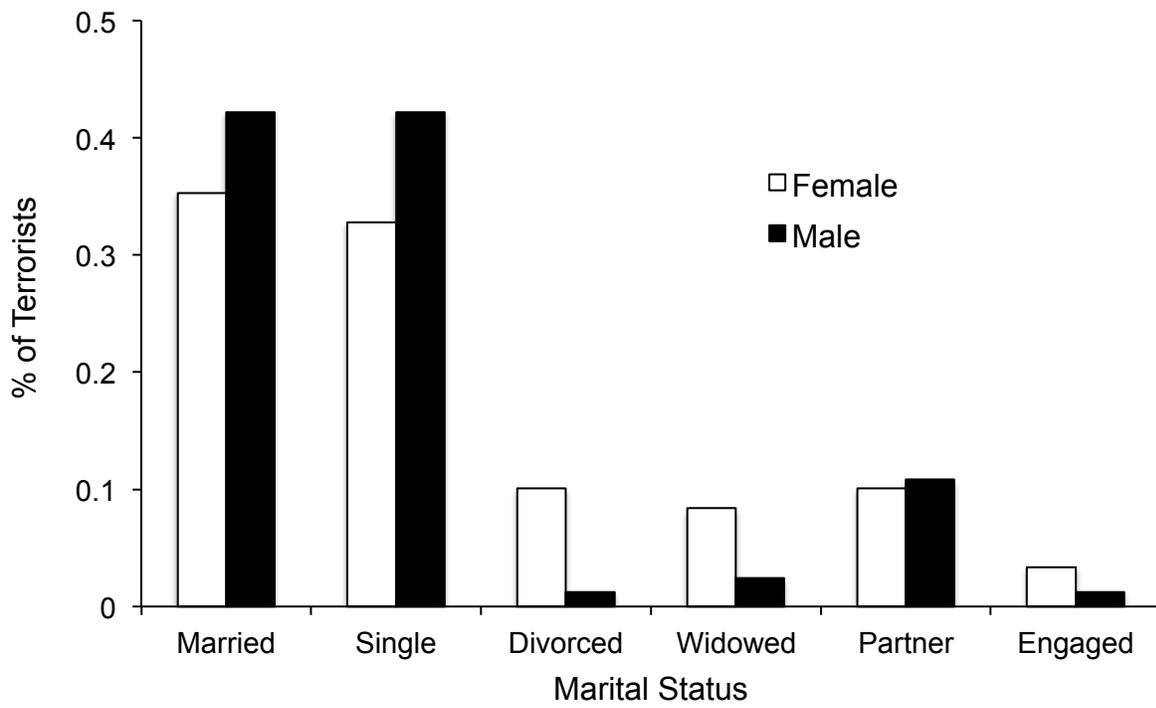


Figure 4. Marital status as a function of gender