

Unwanted Pursuit Behavior After Breakup: Occurrence, Risk Factors, and Gender
Differences

Abstract

This study investigated unwanted pursuit behavior (UPB) perpetration in 631 adult ex-partners. UPB involves the unwanted pursuit of intimacy, a widespread and usually less severe form of stalking. The occurrence and various risk factors of UPB perpetration were examined, accounting for differences between male and female ex-partners and same- and opposite-gender ex-partners. Ex-partners showed on average five to six UPBs after their separation. Male and female and same- and opposite-gender ex-partners displayed an equal number of UPBs. The number of perpetrated UPBs was explained by breakup characteristics (ex-partner initiation of the breakup and rumination or cognitive preoccupation with the ex-partner), relationship characteristics (anxious attachment in the former relationship), and individual perpetrator characteristics (borderline traits and past delinquent behaviors). Rumination was a stronger predictor in female than male ex-partners. Borderline traits and anxious attachment positively predicted UPB perpetration in opposite-gender but not in same-gender ex-partners. Implications of these findings are discussed.

Keywords: unwanted pursuit behavior, stalking, breakup, occurrence, risk factors, gender, male and female ex-partners, same- and opposite-gender ex-partners

Unwanted Pursuit Behavior After Breakup: Occurrence, Risk Factors, and Gender Differences

In the last two decades, many jurisdictions around the world have criminalized stalking as a felony in diverse legal statutes (Meloy & Felthous, 2011). These various legal definitions typically identify stalking as “an intentional pattern of repeated behaviors toward a person or persons that are unwanted and result in fear or that a reasonable person (or jury) would view as fearful or threatening” (Spitzberg & Cupach, 2007, p. 66). Although the media has portrayed a stereotype of stalking as a celebrity followed by a mad stranger, researchers agree that not stranger stalking but relational stalking is the most prototypical form of stalking (Spitzberg & Cupach, 2003). Indeed, meta-analyses show that in around 80% of all cases victims and perpetrators have some form of prior relationship and that half of all stalking results specifically from past romantic relationships (Cupach & Spitzberg, 2004; Spitzberg & Cupach, 2007; Spitzberg, Cupach, & Ciceraro, 2010). With regard to this, intimacy motives have been found to be present in about one third of all cases (Spitzberg & Cupach, 2007).

The concepts *obsessive relational intrusion* (e.g., Cupach & Spitzberg, 1998, 2004) and *unwanted pursuit behavior* (UPB; Langhinrichsen-Rohling, Palarea, Cohen, & Rohling, 2000) specifically describe the unwanted pursuit of intimacy through repeated privacy-violating intrusions. UPB significantly overlaps with stalking, aside from the following two theoretical differences¹. First, even though it is mostly the case, stalking—in contrast to UPB—does *not necessarily* result from intimacy motives. Second, UPB—in contrast to stalking—does *not per se* cause fear or threat in the victim. As UPB involves the full range of mild to severe unwanted pursuit tactics, it is more widespread than stalking and mostly aggravating or annoying but not fear-inducing (e.g., Cupach & Spitzberg, 1998, 2004). For

¹Because stalking and UPB are to a certain extent overlapping and closely-related concepts, they share the same research literature. In order to present previous research findings in an accurate way, the terms stalking or UPB are used in this article in accordance with the exact focus or topic of the studies that are cited.

instance, lifetime prevalence estimates of ex-partner stalking victimization in nationally representative studies amount to 3-4% (Dressing, Gass, & Keuhner, 2007; Purcell, Pathé, & Mullen, 2002; Stieger, Burger, & Schild, 2008) whereas in a recent representative study of adult ex-partners, 37% were found to have used at least one pursuit tactic after their breakup (De Smet, Loeys, & Buysse, 2012). In the latter study, most of the registered tactics were benign tactics (i.e., watching the ex-partner, monitoring the ex-partner, making exaggerated expressions of affection). Yet, the risk that milder forms of UPB escalate into severer violent, persistent, or recurrent stalking episodes has been found to be significantly higher among ex-partners (for review, see McEwan, Mullen, & Purcell, 2007).

In this study, we investigated the widespread and broad array of intimacy-driven UPBs in former partners who represent the most important subgroup of stalkers and pursuers. We specifically examined the occurrence of UPBs in adult ex-partners and investigated various risk factors of engaging in UPBs when breaking up. In our assessment of the occurrence and risk factors of UPB perpetration, we accounted for potential differences related to the gender of the perpetrator (i.e., male vs. female ex-partners) and the gender of perpetrator's ex-partner (i.e., same- vs. opposite-gender ex-partners).

Occurrence of UPB

Gender of the perpetrator. When it comes to stalking, studies show an unequal male-female ratio. In about three-quarters of all cases men are the perpetrators and women the victims of stalking. This is especially the case in studies that included feelings of fear or threat in the victim in their stalking definition, as well as in clinical/forensic samples, or when people self-identified as a stalking victim (Cupach & Spitzberg, 2004; Spitzberg & Cupach, 2007; Spitzberg et al., 2010). In contrast, research in college student samples (e.g., Dutton & Winstead, 2006; Langhinrichsen-Rohling et al., 2000; Wisternoff, 2008) or community samples (De Smet et al., 2012) of ex-partners that assessed the full range of UPBs without

evaluations of fear, revealed that men and women perpetrate a similar number of UPBs after breaking up. Only some gender differences have been found with respect to the types of perpetrated behaviors. This is, compared to women, men have been found to more often engage in approach behaviors such as unwanted asking the ex-partner out on dates (Wisternoff, 2008) and to less often monitor or physically hurt their ex-partner (Dutton & Winstead, 2006). The gender differences in stalking estimates are assumed to partly reflect gender-specific perceptions of the impact of the behavior. Namely, women more likely perceive themselves as victims of unwanted pursuit and perceive the pursuit as threatening—especially when the pursuer is a man—and men more likely admit that they engaged in activities that could be viewed as stalking (Spitzberg et al., 2010). Similarly, male pursuers report more fear in their female targets as a reaction to their pursuit than female pursuers (Sinclair & Frieze, 2000). With respect to pursuit duration, studies have found no or, at most, small gender effects (e.g., Sinclair & Frieze, 2005; Spitzberg et al., 2010).

Gender of the perpetrator's ex-partner. Research on same-gender stalking, versus opposite-gender stalking, is considerably limited as stalking and UPB most typically occur in cross-gender contexts (e.g., Purcell et al., 2002; Spitzberg et al., 2010). Nevertheless, Purcell et al.'s (2002) large-scale representative study found a 24% prevalence rate of same-gender stalking and some cases of this sort have been found to develop from a previous intimate relationship (14% in Pathé, Mullen, & Purcell, 2000; 32% in Strand & McEwan, 2011). Differences in the characteristics of same- and opposite-gender stalking and pursuit cases have been observed, but these differences have unfortunately not yet been examined in the specific context of post-breakup UPB. The limited number of available studies on same-gender stalking in general have found that same-gender dyads experience higher levels of UPB than opposite-gender dyads (Spitzberg et al., 2010) and that same-gender stalkers were more likely to send text messages, to engage in loitering and following, to enter the victim's

home, to damage property, and to make more threats (Strand & McEwan, 2011). In contrast, in the study of Pathé et al. (2000), same-gender stalkers were found to be *less* likely to engage in following and approaching behavior and *equally* likely to threaten the victim and to engage in property damage and violence. In both studies of Pathé et al. (2000) and Strand and McEwan (2011), the duration of stalking was found to be similar in same- and opposite-gender stalking cases. Research findings on differences in the impact of pursuit behaviors as displayed by same- versus opposite-gender pursuers are, to our knowledge, inexistent.

Risk Factors of UPB

Explanatory research on stalking traditionally took a clinical/forensic approach that exclusively explained stalking behavior by its association with disordered or deviant individual traits of perpetrators (e.g., Meloy, 1998). Yet, currently, a multi-dimensional view focusing on risk factors at multiple levels is favored. Similar to intimate partner violence researchers' ecological framework (which explains intimate violence from an interplay of risk factors on the individual, relational, community, and societal level; e.g., Heise & Garcia-Moreno, 2002), White, Kowalski, Lyndon, and Valentine (2000) proposed their integrative contextual developmental model of stalking. According to this model, stalking and UPB are determined by risk factors at the intrapersonal, situational, dyadic, social network, and sociocultural level. The causes of stalking and unwanted pursuit thus clearly cannot be assumed to purely exist in the individual. In this respect—parallel to White et al.'s (2000) situational, dyadic, and intrapersonal level—we focus on a variety of risk factors related to the breakup situation, pre-breakup romantic relationship, and individual perpetrator that have been identified in previous studies on post-breakup stalking and UPB.

As stalking and UPB mainly occur in the context of a failed intimate relationship, risk factors related to the breakup have received interest in recent attempts to explain post-breakup pursuit. These studies found that the probability of someone resorting to UPB or the number

of perpetrated tactics is higher among persons whose ex-partner most wanted the relationship to end than among persons who most wanted the breakup themselves or persons who wanted the breakup as much as their ex-partner (Davis, Ace, & Andra, 2000; Dye & Davis, 2003; De Smet, Buysse, & Brondeel, 2011; De Smet et al., 2012; Wisternoff, 2008). Also, higher levels of cognitive preoccupation with the ex-partner or past relationship have been found to be particularly predictive of more frequent UPB perpetration (Cupach, Spitzberg, Bolingbroke, & Tellitocci, 2011; Davis et al., 2000; Dutton-Greene, 2004).

Next to breakup characteristics, risk factors related to the past romantic relationship can be distinguished. In line with categorical or dimensional conceptualizations of attachment in adult romantic relationships (Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998), numerous studies found that more anxiously (preoccupied or fearfully) attached partners perpetrate more stalking or UPBs after a breakup (Davis et al., 2000; Dutton & Winstead 2006; Dye & Davis, 2003; Kamphuis, Emmelkamp, & de Vries, 2004; Langhinrichsen-Rohling et al. 2000; Wigman, Graham-Kevan, & Archer, 2008; Wisternoff, 2008). The association between avoidant attachment and UPB perpetration has generally been found to be insignificant (e.g., Dutton & Winstead, 2006). Opposed to the study on adult romantic attachment, research has not yet fully tackled the issue of empathic abilities of stalkers and pursuers. Empathy refers to the ability to attribute mental states to another person and to generate an appropriate affective response to the mental state of the other (Baron-Cohen & Wheelwright, 2004). Empathy is believed to foster prosocial behavior and inhibit antisocial behavior (Eisenberg, 2000; Jolliffe & Farrington, 2004). Despite this, apart from indirect evidence that unwanted pursuers and stalkers are less socially competent (Spitzberg & Veksler, 2007), a direct link between empathy and stalking or UPB perpetration has still not been uncovered (Asada, Lee, Levine, & Ferrara, 2004; Lewis, Fremouw, Del Ben, & Farr, 2001). Specific measures of empathy have been found to be more sensitive than

global measures of empathy (e.g., McGrath, Cann, & Konopasky, 1998) and at present researchers favor the view that attachment is a relationship-specific instead of an individual trait variable (Mikulincer & Shaver, 2007). Therefore, we assessed attachment style and empathy in a relationship-specific manner (i.e., with reference to the pre-breakup relationship with the ex-partner) and considered them as relationship characteristics.

Finally, research on individual perpetrator characteristics found that ex-intimate stalkers likely have a history of criminal convictions and mental health problems (Roberts, 2002). Cluster B personality disorders or traits, especially borderline traits, have been found to distinguish stalkers and pursuers from control groups (Lewis et al., 2001; Spitzberg & Veksler, 2007). Earlier work has shown that narcissistic traits enhance the acceptability of UPB perpetrations (Asada et al., 2004) and that some ex-intimate stalkers fit descriptions of a criminal/antisocial stalker (Kamphuis et al., 2004). However, in the study of Spitzberg and Veksler (2007), levels of narcissistic and antisocial personality characteristics were not found to discriminate pursuers and stalkers from non-pursuers.

Gender of the perpetrator. To date, there has been very little discussion on the differential predictability of UPBs as perpetrated by male versus female ex-partners. The limited number of studies that addressed gender differences tend to report few differences with respect to the variables discussed in this study. For example, female stalkers are less likely to have a history of criminal offenses than male stalkers, but male and female stalkers are equally likely to have personality disorders (Purcell, Pathé, & Mullen, 2001). Further, the positive associations between stalking perpetration and borderline traits (Lewis et al., 2001), obsessive thoughts about the ex-partner (Davis et al., 2000), anxious attachment (Davis et al., 2000; Dye & Davis, 2003; Lewis et al., 2001), and being the recipient of the breakup (Dye & Davis, 2003) have been found to be similar for men and women.

Gender of the perpetrator's ex-partner. Again, potential differences in the risk factors of post-breakup UPB perpetration as displayed by same- or opposite-gender ex-partners have received inadequate research attention. Only a limited number of studies, performed outside the specific context of breaking up, have compared same- and opposite-gender stalkers while focusing on some of the risk factors in this paper. These studies have shown that, relative to opposite-gender stalkers, same-gender stalkers are no more likely to have a prior history of criminal offending including violent offences (Pathé et al., 2000) and also do not differ in their psychopathological status, such as in the presence of personality disorders (Pathé et al., 2000; Strand & McEwan, 2011). As is the case for opposite-gender stalkers, same-gender stalkers often have a primary diagnosis of a personality disorder, most frequently borderline and less frequently narcissistic or antisocial disorder (Pathé et al., 2000).

The Present Study

The current study had two major aims. First, alongside registering the occurrence of UPBs in adult ex-partners, we aimed to extend the explanatory research on post-breakup UPB perpetration by taking an integrative approach. Specifically—in line with the idea that stalking and UPB are determined by risk factors at different levels—we aimed to perform an integrated examination of risk factors at the level of the breakup, pre-breakup relationship, as well as individual perpetrator identified in previous research. Second, we aimed to examine differences between male and female ex-partners and same- and opposite-gender ex-partners in our assessment of the occurrence and risk factors of UPB perpetration. As outlined above, the moderating effects of the perpetrators' gender and gender of their ex-partner have not yet been properly addressed in the particular context of post-breakup UPB. Yet, it is relevant to know if findings made about UPB can be generalized across these gender differences.

With respect to the occurrence of UPB, we expected that male and female ex-partners would perpetrate a similar number of UPBs (hypothesis 1a) and would differ in the use of

certain types of tactics with men more often engaging in approach behaviors and less often monitoring and physically hurting their former partner than women (hypothesis 1b). We also predicted that male and female ex-partners would perpetrate UPBs for equally long periods of time (hypothesis 1c) and would differ in their perceptions of the impact of their UPBs with men reporting more negative reactions to their pursuit than women (hypothesis 1d). Based on the limited number of available studies on same-gender stalking, we expected that, compared to opposite-gender ex-partners, same-gender ex-partners would perpetrate more UPBs (hypothesis 2a) and that both groups would engage in pursuit behaviors equally long (hypothesis 2b). As findings on differences between same- and opposite-gender perpetrators in the types and the impact of displayed UPBs are contradictory or lacking, we considered these research questions as explorative in nature.

With regard to the risk factors of UPB, we expected that the number of perpetrated UPBs would be positively related to being the recipient of the breakup (hypothesis 3a), the degree of post-breakup rumination (hypothesis 3b), the level of anxious attachment in the past relationship (hypothesis 3c), the number of earlier perpetrated delinquent behaviors (hypothesis 3d), and the level of borderline personality traits (hypothesis 3e). Controlling for these effects, we did not expect effects of the degree of avoidant attachment (hypothesis 3f) and empathy in the broken relationship (hypothesis 3g) and of narcissistic (hypothesis 3h) and psychopathic (hypothesis 3i) personality traits. Based on the available research presented above, we finally assumed that the risk factors of post-breakup UPB perpetration would be largely identical for male and female ex-partners (hypothesis 4) and same- and opposite-gender ex-partners (hypothesis 5).

Method

Participants and Procedure

Men and women older than 18 years who had broken up with a same- or opposite-gender romantic partner within the last two years were invited to participate in the study. To reach a widespread sample, we recruited participants through different media: (a) newspaper, magazine, and internet advertisements, (b) distribution of research flyers and posters in several public places and waiting rooms of mental health services where ex-partners often look for help and support, and (c) snowball-sampling via social networks and e-mail contacts of the researchers. Additional efforts were made to recruit same-gender ex-partners by advertising in specific magazines and on websites of lesbian, gay, bisexual, and transgender (LGBT) associations and spreading research flyers and posters in LGBT meeting places. All recruitment channels promoted our website, where participants could fill out a series of questionnaires. This resulted in a convenience sample of 906 participants of whom 631 (69.6%) fully completed the online assessment in a valid way. Respondents were required to complete the survey during one online session, which took on average less than an hour ($M = 47.30$ minutes, $SD = 18.88$). The drop-out participants did not differ from the 631 participants on the criterion variable of this study (non-parametric Mann-Whitney U test for UPB perpetration = 67,115.50, $p = .473$).

The 631 participants (64.3% women; 98.1% of Belgian nationality) were on average 30.57 years old ($SD = 10.75$, range: 18–61). One hundred and seventy-eight (28.2%) ex-partners had separated from a same-gender partner (15.8% men and 12.4% women). Most participants were highly educated (72.4% with a Bachelor's degree or above) and not currently involved in a romantic relationship (74.0%). A smaller proportion had children with the ex-partner (18.7%) and indicated that they received post-breakup psychological guidance or treatment related to their separation (22.7%). The broken relationships had lasted an average of 5.75 years ($SD = 7.21$; range: 0–38) and ended on average one year ago ($M = 12.19$ months, $SD = 7.90$, range: 0–24).

The password-protected online assessment started with a description of the study's goal, inclusion criteria, procedure, and reward for participation (i.e., a voucher of 20€ for every 20th participant). After the participants agreed with the informed consent and typed in their email address (to which a unique code was automatically sent), they started filling out the questionnaires. Participation in the study was on a voluntary basis. Anonymity was assured as email addresses and questionnaire data were saved separately. The study was approved by the ethical committee of Ghent University and the Belgian Privacy Commission.

Measures

UPB perpetration. UPB perpetration was assessed with an adapted Dutch version of the Relational Pursuit-Pursuer Short Form (RP-PSF, Cupach & Spitzberg, 2004; Dutch version, De Smet et al., 2012). This 28-item questionnaire measured how often the participants had pursued their ex-partner since the breakup, for the purpose of establishing some form of intimate relationship that their ex-partner did not want by, for example, "Leaving unwanted gifts (e.g., flowers, stuffed animals, photographs, jewelry, etc.)" or "Following him or her around (e.g., following the ex-partner to or from work, school, home, gym, daily activities, etc.)." The frequency with which the participants conducted each behavior was rated on a 5-point Likert scale (from 0 = *never* to 4 = *over 5 times*). The RP-PSF is considered to show content and face validity as the items refer to a wide range of UPBs and were developed through thorough meta-analytic work (cf., Cupach & Spitzberg, 2004). The overall index of perpetration was calculated by summing up all items. We refer to the sum score as the number of UPBs. The 28-item RP-PSF was internally consistent in this study ($\alpha = .82$) as well as in previous ones (e.g., De Smet et al., 2012).

To obtain information on the manifestation and perception of UPB perpetration by our respondents, some additional questions were asked: "If you conducted one or more of the aforementioned behaviors, how annoying was this for your ex-partner?" (0 = *not at all* to 8 =

very much); “..., how much fear did your ex-partner feel?” (0 = *not at all* to 8 = *very much*); “..., to what extent did your ex-partner feel threatened?” (0 = *not at all* to 8 = *very much*); and “..., for how long did you exhibit these behaviors?” (number of weeks).

Initiator status. To identify the initiator of the breakup, the question “Who wanted the breakup the most?” (1 = *I*, 2 = *ex-partner*, and 3 = *both equally*) was asked.

Post-breakup rumination. To measure the extent of preoccupation with the ex-partner, a forward and backward translated Dutch version of the 9-item Relationship Preoccupation Scale (RPS; Davis, Shaver, & Vernon, 2003) was administered. Items, such as “I think about my ex-partner constantly” and “Everything seems to remind me of my ex-partner”, were rated on a 7-point Likert scale (from 1 = *strongly disagree* to 7 = *strongly agree*). Previous research has demonstrated a good internal consistency of the RPS (Davis et al., 2003; Saffrey & Ehrenberg, 2007), concordant with the current high alpha value of .94.

Adult attachment style. An adapted version of the Dutch Experiences in Close Relationships Scale (ECR, Brennan et al., 1998; Dutch ECR, Conradi, Gerlsma, van Duijn, & de Jonghe, 2006) was used to assess the participants’ levels of anxious and avoidant attachment in the relationship with their ex-partner before the breakup. Participants were explicitly instructed to think of their ex-partner and to recall how they had generally felt in the relationship before it ended. Eighteen items probed the degree of anxious attachment (i.e., fear of abandonment and strong desires for interpersonal merger; e.g., “I worried that my ex-partner didn’t care about me as much as I cared about him/her”) and 18 items tested the degree of avoidant attachment (i.e., discomfort with closeness, dependence, and intimate self-disclosure; e.g., “I was nervous when my ex-partner got too close to me”). All 36 items were answered on a 7-point scale (ranging from 1 = *strongly disagree* to 7 = *strongly agree*). Previous research has supported the reliability and validity of the ECR (Ravitz, Maunder,

Hunter, Sthankiya, & Lancee, 2010). In the current sample, Chronbach's alphas were high for both the anxious ($\alpha = .88$) and avoidant ($\alpha = .89$) attachment dimensions.

Empathy. An adapted version of the Dutch Empathy Quotient (EQ, Baron-Cohen & Wheelwright, 2004; Dutch EQ, De Corte, Uzieblo, Buysse, & Crombez, 2006) was used to assess the participants' empathic abilities in the relationship with their ex-partner. Forty items assessed several empathy components including cognitive empathy (e.g., "I could tell if my ex-partner was masking his/her true emotions"), emotional reactivity (e.g., "I tended to get emotionally involved with my ex-partner's problems"), and general social skills (e.g., "I find it hard to know what to do in a social situation"). Items were rated on a 4-point scale (from 1 = *strongly agree* to 4 = *strongly disagree*) and subsequently recoded into 1 or 2 points if the participant reported the empathic behavior slightly or strongly, respectively. Previous studies have demonstrated good reliability and validity of the EQ (e.g., Lawrence, Shaw, Baker, Baron-Cohen, & David, 2004). Based on Rasch analyses, the EQ has recently been found to be a one-dimensional measure of empathy (Allison, Baron-Cohen, Wheelwright, Stone, & Muncer, 2011). Hence, empathy can be indexed by summing up the 40 recoded items, which proved to be internally consistent in the present sample ($\alpha = .86$).

Psychopathic traits. Psychopathic traits were assessed with the Hare Self-Report Psychopathy Scale-III (SRP-III, Paulhus, Neumann, & Hare, in press; Dutch SRP-III, Uzieblo, De Ruiter, Crombez, Paulhus, & Hare, 2007) using 64 items scored on a 5-point scale (from 1 = *strongly disagree* to 5 = *strongly agree*). Analogous to the Psychopathy Checklist-Revised (Hare, 2003), the SRP-III assesses the four core features of psychopathy: interpersonal manipulative behavior (e.g., "I purposely flatter people to get them on my side"), callous affect (e.g., "People sometimes say that I'm cold-hearted"), erratic lifestyle (e.g., "I've often done something dangerous just for the thrill of it"), and criminal tendencies (e.g., "I have threatened people into giving me money, clothes, or makeup"). The SRP-III

exhibits good reliability and validity in non-forensic/clinical student and community samples (Caes et al., 2012; Mahmut, Menictas, Stevenson, & Homewood, 2011). In this study, the SRP-III also showed a good internal reliability ($\alpha = .89$).

Borderline traits. To assess borderline traits, we used the McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD, Zanarini et al., 2003; Dutch MSI-BPD, Verschuere, & Tibboel, 2011), which consists of 10 items (e.g., “Have you been extremely moody?”, “Have you chronically felt empty?”; 0 = *no* and 1 = *yes*). The degree of borderline traits is indexed by summing up the scores on all items. A score of seven or above indicates the presence of a borderline personality disorder (Patel, Sharp, & Fonagy, 2011; Zanarini et al., 2003). There is support for the reliability and the factorial, convergent, and criterion validity of the scale in non-clinical community and student samples (Patel et al., 2011; Verschuere & Tibboel, 2011). Chronbach’s alpha in this study was adequate ($\alpha = .77$).

Narcissistic traits. The Dutch Narcissism Scale (NNS; Ettema & Zondag, 2002) was used to measure the degree of non-pathological narcissism. The development of the NNS was based on the Narcissistic Personality Inventory (Raskin & Hall, 1979, 1981) and the Hypersensitive Narcissism Scale (Hendin & Cheek, 1997). All 35 items (e.g., “I can easily get others to do what I feel is necessary” and “When I enter a room I am often painfully aware of the way others look at me”) were scored on a 7-point scale (from 1 = *certainly not the case* to 7 = *certainly the case*). The validity and reliability of the NNS are supported (Ettema & Zondag, 2002; Zondag, 2005) and we observed a good internal reliability ($\alpha = .81$).

Delinquent behavior. The widely-adopted International Self-Report Delinquency Survey (ISRD; Junger-Tas, Terlouw, & Klein, 1994) was used to measure past delinquent behavior. Respondents were asked to indicate how many times they ever displayed 44 different delinquent behaviors on a 5-point Likert scale (from 0 = *never* to 4 = *more than 10 times*). The items tapped five categories of offenses: problem behavior (e.g., “Stay away from

school”), vandalism (e.g., “Vandalize property belonging to someone else”), theft behavior (e.g., “Steal from work”), violent and aggressive behavior (e.g., “Engage in fighting”), and alcohol and drug use (e.g., “Use heroin, cocaine, crack, PCP, LSD”). The overall index of delinquent behavior, obtained by summing up the items, proved to be internally consistent ($\alpha = .81$). Zhang, Benson, and Deng (2002) found support for the test-retest reliability and stated that the ISRD can be reliably used to gather self-reported information on criminal acts.

Social desirability. Because of the focus on perpetrator reports, we included a measure to control for self-presentation issues. The 22-item Dutch version of the Eysenck Personality Questionnaire-Lie Scale (EPQ-Lie Scale, Eysenck & Eysenck, 1975; Dutch EPQ-Lie Scale, Sanderman, Arrindell, Ranchor, Eysenck, & Eysenck, 1995) was used to assess socially desirable responding. Items were answered on a dichotomous scale (e.g., “Do you sometimes talk about things you know nothing about?” and “Are all your habits good and desirable ones?”; 0 = *no* and 1 = *yes*). The EPQ-Lie Scale exhibits an acceptable degree of internal consistency, good test-retest reliability, and validity (Ferrando, Chico, & Lorenzo, 1997; Sanderman et al., 1995). Chronbach’s alpha for the present sample was .82.

Statistical Analyses

The occurrence of UPB in our overall sample was assessed by calculating descriptive statistics of the total number of perpetrated UPBs, the individual UPB-items, and the additional UPB-questions referring to the duration and impact of the pursuit. Male and female and same- and opposite-gender ex-partners were compared on these variables—using non-parametric Mann-Whitney *U* tests—in order to test our hypotheses on gender differences.

Risk markers of UPB perpetration were examined with advanced count regression models that are specifically designed to analyze skewed counts (see Atkins & Gallop, 2007; Karazsia & van Dulmen, 2010) such as the right skewed number of perpetrated UPBs in our sample (see Figure 1). Among the different types of existing count models, we found—based

on several formal tests (outlined in Atkins & Gallop, 2007; Loeys, Moerkerke, De Smet, & Buysse, 2012)—strong evidence that the hurdle negative binomial (NB) regression model best fitted our dependent’s distribution. This model splits the distribution in zero and non-zero counts and assesses the effects of predictors in two parts. In the zero-hurdle part, the probability of all non-zero counts, relative to all zero counts, is modeled. In the counts part, the frequency of all non-zero counts in the distribution is modeled (for more details, see Loeys et al., 2012). In other words, the zero hurdle part assessed the effects of our predictors for showing UPBs or not while the counts part assessed the effects of our predictors on the frequency of UPBs perpetrations among the perpetrators. In both parts, regression coefficients are exponentiated (e^B) and named Odds Ratios (*ORs*) and Rate Ratios (*RRs*), respectively. In percentages— $100 \times (e^B - 1)$ —*ORs* reflect the percentage decrease ($OR < 1$) or increase ($OR > 1$) in the odds of perpetrating UPB, whereas *RRs* reflect the percentage decrease ($RR < 1$) or increase ($RR > 1$) in the expected frequency of UPBs for each unit increase in the independent variable, controlling for other predictors in the model. For the categorical and continuous predictors we, respectively, used dummy coding and standardized z-scores in our regression models.

After testing a first hurdle NB model that explored the effects of some control variables, a second hurdle NB model assessed the effects of our risk markers of interest on the number of perpetrated UPBs. Descriptives and bivariate correlations of these risk factors are displayed in Table 1. Finally, moderator analyses were used to examine whether the effects of our risk factors on UPB perpetration differed between male and female ex-partners and between same- and opposite-gender ex-partners.

Results

Occurrence of UPB

The histogram displayed in Figure 1 graphs the skewed distribution of the dependent variable. About one third of the sample (31.7%, $n = 200$) reported no UPB perpetration since the separation. A large proportion (62.6%, $n = 395$) displayed between 1 and 20 behaviors. The maximum number of observed UPBs was 49, but only a small proportion of participants (5.7%, $n = 36$) reported more than 20 behaviors (grouped together in the histogram in a single category). On average five to six behaviors were registered. The three most reported behaviors included making exaggerated expressions of affection, monitoring the ex-partner or his/her behavior, and leaving unwanted messages of affection. More extreme behaviors were less frequently reported and the least reported behaviors included showing up at places in threatening ways, leaving or sending the ex-partner threatening objects, kidnapping or physically constraining the ex-partner, and physically endangering the ex-partner's life ($\leq 1\%$). Descriptive results of the additional UPB-questions showed that perpetrators tended to perceive their behaviors as only slightly annoying for their ex-partner and nearly not frightening or threatening, respectively $M(SD) = 2.19(2.27)$, $M(SD) = 0.82(1.68)$, and $M(SD) = 0.69(1.50)$ on a scale from 0 to 8. The behaviors were displayed for an average of 10 weeks; $M(SD) = 9.88(18.14)$, range: 0–112. <Insert Table 1 and Figure 1 about here>

Gender of the perpetrator and of the perpetrator's ex-partner. Mann-Whitney U tests revealed that male and female ex-partners perpetrated a similar number of UPBs, as did same- and opposite-gender ex-partners (id. to hypothesis 1a, vs. hypothesis 2a). In line with our expectations (cf., hypothesis 1b), we found differences between male and female ex-partners on the following specific UPB items: Men more often left unwanted gifts and unwanted messages of affection but less often hurt their ex-partner physically than women (respectively, $U = 42,419.00$, $p = .004$; $U = 41,019.50$, $p = .008$; $U = 47,471.00$, $p = .026$). Same- and opposite-gender ex-partners also appeared to differ on some types of pursuit tactics: Same-gender ex-partners more often left unwanted messages of affection, intruded

upon friends/family/coworkers of their ex-partner, left or sent their ex-partner threatening objects than opposite-gender ex-partners, but less often engaged in regulatory harassment (respectively, $U = 43,940.50$, $p = .027$; $U = 44,042.50$, $p = .005$; $U = 40,908.00$, $p = .037$; $U = 39,205.00$, $p = .048$). With respect to the additional UPB-questions, we found that men and women engaged in pursuit tactics for a similar number of weeks (id. to hypothesis 1c) and perceived their behaviors as equally annoying, frightening, or threatening to their ex-partner (vs. hypothesis 1d). Similarly, same- and opposite-gender ex-partners did not differ in the duration of their pursuit (id. to hypothesis 2b) or in the perceived impact of their behavior for their targets, except that opposite-gender ex-partners perceived their behaviors as more threatening for their ex-partner than same-gender ex-partners ($U = 17,426.00$, $p = .011$).

Risk Factors of UPB

The hurdle NB model that explored control variables included the number of UPBs as dependent variable and as independent variables the participants' social desirability scores, age, education level, involvement in a new romantic relationship, clinical status, the duration of the past relationship, the time since the breakup, the presence of children with the ex-partner, the gender of the perpetrator, the gender of the perpetrator's ex-partner, as well as the Gender of the perpetrator x Gender of the perpetrator's ex-partner interaction to explore potential differences in man-man, woman-woman, woman-man, or man-woman relationships. The model showed that the odds of perpetrating UPB and the frequency of expected UPB perpetrations were lower for non-clinical relative to clinical ex-partners (respectively, $OR = 0.59$ or a 41% decrease, 95% CI = 0.37–0.95, $p = .028$; $RR = 0.75$ or a 25 % decrease, 95% CI = 0.59–0.97, $p = .028$). In the counts part, we also observed a positive effect of time since the breakup and a negative effect of social desirability. Specifically, the expected number of UPBs increased with 11% ($RR = 1.11$, 95% CI = 1.00–1.23, $p = .045$) for each *SD* increase in

the number of months since the breakup and decreased with 15% ($RR = 0.85$, 95% CI = 0.77–0.95, $p = .003$) for each *SD* increase in the participant's score on the Lie-scale.

Hypotheses 3a to 3i were tested by regressing the effects of initiator status, rumination, anxious and avoidant attachment, empathy, psychopathic, borderline, and narcissistic traits, and past delinquent behavior on the UPB counts in a hurdle NB model (controlling for clinical status, time since the breakup, and social desirability). The results of this model, presented in Table 2, confirm the proposed hypotheses. The odds of showing UPB by our participants after the breakup increased when their ex-partner most wanted the breakup instead of they themselves (247% increase), when they were more preoccupied by their ex-partner (122% increase per *SD* increase in the rumination score), or when they displayed more borderline traits (48% increase per *SD* increase). In contrast, this odds decreased (with 57%) when participants indicated that they had both wanted the breakup equally compared to when their ex-partner most wanted the separation. Similarly, the number of perpetrated UPBs increased in cases where participants reported that their ex-partner instead of they themselves wanted the breakup most (34% increase), or if they ruminated more (34% increase per *SD* increase) or reported more borderline traits (15% increase per *SD* increase). In addition, more UPBs were observed when the perpetrators had been more anxiously attached in the past relationship or reported a history involving more delinquent behavior (14% increase per *SD* increase for each). <Insert Table 2 about here>

Moderating effects of gender of the perpetrator and of the perpetrator's ex-partner. The moderating effects of the perpetrators' gender and the gender of their ex-partner in the associations between our predictors and UPB perpetration were finally assessed. In this respect, nine models (one per risk factor) examined the two- and three-way interaction effects of gender of the perpetrator and of the perpetrator's ex-partner (i.e., Gender of the perpetrator x Risk factor, Gender of the perpetrator's ex-partner x Risk factor, and Gender of

the perpetrator x Gender of the perpetrator's ex-partner x Risk factor). As none of the three-way interaction effects (which controlled for possible differences between man-man, woman-woman, woman-man, and man-woman relationships) were significant, they were removed from the models. Next, the non- or least significant two-way interactions including gender of the perpetrator or of the perpetrator's ex-partner were eliminated (cf., backward regression). Interactions were only assessed in the counts part of the model in Table 2 to halve the number of tested interactions and reduce the risk of false positive effects. Although no moderating effects were expected (cf., hypotheses 4 and 5), three significant two-way interactions were found. First, higher rumination scores resulted in a larger increase in the number of perpetrated UPBs in female compared to male ex-partners (see Figure 2a). Second, a higher degree of anxious attachment in the past relationship resulted in less UPB perpetrations by same-gender ex-partners whereas anxious attachment was involved in a positive association with UPB perpetration in opposite-gender ex-partners (see Figure 2b). Third, borderline traits were positively associated with UPB perpetration in opposite-gender ex-partners whereas these traits were not associated with the number of UPBs perpetrated by same-gender ex-partners (see Figure 2c). <Insert Figure 2 about here>

Discussion

The present study describes the occurrence of UPBs in adult ex-partners and aimed to perform an integrated examination of breakup, relationship, and individual perpetrator characteristics in order to better explain UPB perpetrations. Additionally, this study aimed to examine differences between male and female and same- and opposite-gender ex-partners in the occurrence and prediction of UPB perpetration as such gender differences have not yet been extensively explored in the context of post-breakup UPB.

Occurrence of UPB

The estimates in the overall sample showed that the majority of ex-partners engage in post-breakup UPBs. These behaviors tend to be perpetrated at rather low frequencies and only for a restricted period of time, however. This finding is in line with UPB investigations in separated college students (e.g., Dutton & Winstead, 2006; Langhinrichsen-Rohling et al., 2000; Wigman et al., 2008; Wisternoff, 2008) suggesting that non-extreme patterns of pursuit are relatively normal after a breakup. Compared to the recent UPB study by De Smet et al. (2012) in a representative Flemish sample of divorced persons, the proportion of Flemish ex-partners found by this study to have engaged in UPBs was markedly higher, as was the mean number of perpetrated tactics that we present here (respectively 68% vs. 37% and 5-6 vs. 2-3 tactics). This might be explained by this sample's self-selective convenient nature, as estimates of interpersonal aggression tend to be higher in convenient samples compared to representative samples (Nielsen & Einarsen, 2008). The inclusion of younger adults in this study can also explain this divergence, as younger persons have been found to show more UPBs (De Smet et al., 2012). Similar to the previous study, our participants mainly used hyper-intimacy or surveillance tactics—specifically, making exaggerated expressions of affection, leaving unwanted messages of affection, and monitoring the ex-partner—and rarely engaged in threatening or aggressive types of pursuit. Related to this, the impact of tactics was perceived as faintly annoying but virtually not frightening or threatening. Despite this, these results should be interpreted with caution as pursuers have the tendency to underreport UPB activities and to underestimate the negative effects of their behavior (Dutton & Winstead, 2006; Langhinrichsen-Rohling et al., 2000; Sinclair & Frieze, 2005). Moreover, according to our model, pursuers were prone to social desirable responding.

As expected, men and women perpetrated an equal number of tactics over a similar time span. They only differed in specific methods in which they attempted to re-establish the broken intimate relationship: In line with our predictions, men more often left unwanted gifts

and messages of affection whereas women more often physically hurt their ex-partner. Similar findings have been reported in college student samples showing that men more often conduct ordinary approach behaviors (Sinclair & Frieze, 2000, 2005; Wisternoff, 2008) and women more often physically hurt their ex-partner (Dutton & Winstead, 2006). Gender-specific sociocultural beliefs that promote men to initiate courtship behaviors and requests for intimacy and women as the weaker sex may make it more normative or justifiable for men to display affectionate approaches and for women to engage in aggressive behaviors (Langhinrichsen-Rohling, 2012). Indeed, Thompson, Dennison, and Stewart (2012) found evidence for the sociocultural attitude that a woman's use of violence against her partner is more acceptable, and that women who endorse this attitude self-report higher levels of stalking and associated violence. Although the literature (Sinclair & Frieze, 2000; Spitzberg et al., 2010) suggests that male perpetrators are more conscious of the negative impact of their behaviors, we found no differences in men's and women's appraised impact of their UPBs upon their ex-partner—at least, not at the low levels of annoyance, fear, and threat that we mainly registered in our sample. Possibly, our hypothesized gender difference only comes into play in severe pursuit cases. For example, only in the violent stalking cases in Thompson et al.'s (2012) study, male perpetrators more likely believed they frightened, intimidated, or harmed their target whereas no such gender difference was observed in non-violent cases.

Our results further show that same-gender ex-couples are equally vulnerable to UPBs than opposite-gender ex-couples: Both groups pursued their ex-partner for equally long and displayed a similar number of UPBs. This contradicts Spitzberg et al.'s (2010) evidence for higher levels of pursuit victimization in same-gender relationships, although it should be noted that their effect size was trivial and they did not take the specific context of the breakup into account. Further, we detected differences in some of the specific tactics that were perpetrated. In line with Strand and McEwan (2011), same-gender ex-partners engaged in

more approach tactics (i.e., engaging in unwanted messages of affection and intruding upon acquaintances of the ex-partner) and threatening behaviors (i.e., leaving or sending threatening objects). Nonetheless, same-gender ex-partners perceived the impact of their behaviors as significantly less threatening than their opposite-gender counterparts. Two explanations seem plausible. First, same-gender ex-partners might have devaluated the impact of their pursuit as it does not fit with the stereotypical case of a man pursuing a woman (Yanowitz & Yanowitz, 2012). Second, targets of same-gender pursuers might have shown fewer signs of feeling threatened: Victims of woman-woman pursuit might articulate less threat as pursuit by women is generally appraised as less threatening than pursuit by a man and victims of man-man pursuit might report less threat as male victims typically feel less threatened (Spitzberg et al., 2010) and are less likely to feel that they are being stalked when the pursuer is a man (Tjaden, Thoennes, & Allison, 2000).

In addition to our focus on differences between male and female ex-partners on the one hand and same- and opposite-gender ex-partners on the other hand, we explored whether male to male, female to female, female to male, and male to female pursuers differed in the occurrence and risk factors of UPB perpetration. According to our regression models, these four types of dyads neither differ with respect to the number of displayed UPBs nor with respect to the effects of our risk factors on the perpetration of these behaviors.

Risk Factors of UPB

The risk factors pinpointed by the main effects model show that—in line with White et al.'s (2000) integrative model—former partner pursuit is a multiple-determined phenomenon influenced by risk factors at different levels. As expected, a higher number of perpetrated tactics was predicted by certain breakup characteristics (i.e., initiation of the breakup by the perpetrator's ex-partner instead of the perpetrator and more rumination about the former partner), relationship characteristics (i.e., more anxious attachment in the former relationship),

and individual perpetrator characteristics (i.e., more borderline personality traits and past delinquent behaviors). The other relationship and individual characteristics in this study—the degree of avoidant attachment and empathy in the past relationship and the degree of psychopathic and narcissistic traits—did not explain the number of tactics pursuers displayed.

Taken together, these results might imply that more persistent pursuers are people who possess more stable borderline personality traits that put them at risk of displaying more delinquent behaviors and showing anxious attachment in their intimate relationships. This more anxious attachment style might subsequently make them less likely to initiate a separation and more likely to experience elevated levels of rumination after being rejected. We did not address such interrelationships between our predictors, but previous studies tend to support this profile. It has namely been found that being rejected elicits more obsessive thoughts about the ex-partner (Davis et al., 2000) and that the relationship between anxious attachment and stalking is mediated by being the recipient of the breakup (Dye & Davis, 2003) and obsessive thoughts (Davis et al., 2000). Furthermore, evidence shows that people with borderline traits tend toward fearful or preoccupied attachment patterns in their close relationships (e.g., Levy, Meehan, Weber, Reynoso, & Clarkin, 2005). Borderline personality types are characterized by impulsivity and instability in interpersonal relationships, self-image, and affect. They have difficulties with being alone and make frantic efforts to avoid real or imagined abandonment (APA, 2000) that match with the need for approval, the inclination to worry about rejection, and the tendency to feel distressed when the attachment figure is unavailable that is described in Brennan et al.'s (1998) anxiety dimension. Borderline personality types also tend to display various forms of delinquent behavior because of their impulsivity, recklessness, and difficulty with controlling anger (APA, 2000). Thus, the higher levels of past delinquent behaviors displayed by more persistent pursuers in our sample might—just as the UPBs themselves—be a product of underlying borderline traits.

Our moderator analyses show that the effects of some risk factors differed for male and female and same- and opposite-gender ex-partners. In contrast to previous observations of similar correlations between obsessive thoughts about the ex-partner and acts of stalking in men and women (Davis et al., 2000), the effect of rumination was stronger for female ex-partners in our sample. In the depression literature, women are found to be more prone to rumination. Their greater tendency to ruminate contributes to more depressive symptoms, which in turn contribute to more rumination (Nolen-Hoeksema, Larson, & Grayson, 1999). According to UPB researchers (e.g., Cupach & Spitzberg, 2004), such mutually exacerbating influences between rumination and negative affect are central mechanisms that fuel persistent pursuit. Although these mechanisms are assumed to apply to men and women equally (e.g., Cupach & Spitzberg, 2004; Davis, Swan, & Gambone, 2012), it seems that they especially render women to perpetuate in their attempts to re-establish the broken relationship.

Finally, the number of tactics perpetrated by same-gender ex-partners in our sample was, different from the tactics shown by opposite-gender ex-partners, not explained by their degree of borderline traits or anxious attachment in the former relationship. Psychological processes such as separation anxiety that characterize borderline and anxious attached types of persons—as outlined above—do not therefore seem to motivate the perpetration of UPBs by same-gender ex-partners. Based on the same-gender stalking studies by Pathé et al. (2000) and Strand and McEwan (2011), it might be assumed that same-gender pursuers are more motivated by a resentful than by a rejected or affectionate type of motivation. A more dyadic explanation might also be plausible: It is known that same-gender couples have higher levels of equality in their relationships than opposite-gender couples (e.g., Kurdek, 2004) and that the perpetration of UPBs by more anxiously attached persons is lower when separating from a similar more anxiously attached partner than when separating from a dissimilar less anxiously attached partner (De Smet, Loeys, & Buysse, 2013). Although we did not assess both dyad

members' attachment styles, it is possible that more equal attachment characteristics in same-gender ex-couples buffered the perpetration of UPBs by more anxiously attached persons.

Clearly, these tentative conclusions need to be further validated.

Implications, Strengths, and Limitations

This paper extends previous research by taking an integrative approach to explaining post-breakup UPB perpetration that consisted of a simultaneous investigation of risk factors at different levels. Previous studies often assessed breakup, relationship, and individual perpetrator characteristics separately (e.g., De Smet et al., 2011; Spitzberg & Veksler, 2007) or solely focused on individual risk markers as part of the traditional clinical/forensic view on stalking (e.g., Meloy, 1998). Yet, this study shows that breakup and relationship characteristics are just as important as individual characteristics in explaining post-breakup UPB perpetration. As such, the traditional clinical/forensic perspective, which focuses on individual risk markers, deserves to be complemented with a situational and relational view focusing on risk markers related to the breakup situation and past romantic relationship. In order to further build on an integrative theory of former partner pursuit, more studies that approach UPB perpetration from a multi-faceted perspective seem necessary. As we only assessed a selective set of risk factors, these studies could integrate more breakup variables such the number of breakups and reunions that occurred previously, relationship characteristics such as violence in the past relationship, and individual perpetrator characteristics such as Axis-I-disorders (e.g., Cupach & Spitzberg, 2004; Davis et al., 2000). As stated by Cupach and Spitzberg (2004): "Ultimately, a complete theory of stalking and unwanted pursuit will need to accommodate all of these factors" (p. 117). To develop a complete theory, risk factors situated on broader sociocultural and social network levels could also be assessed (see White et al., 2000).

This examination of gender differences that have been underrepresented in the field of post-breakup UPB also contributes to the existing knowledge. The gender of the perpetrator and of the perpetrator's ex-partner moderated the effects of some of our risk factors on the number of perpetrated UPBs. Building on these results, the pursuers' gender and gender of their ex-partner seem worthwhile to consider in future studies seeking to explain UPB. The observation that borderline traits and anxious attachment cannot explain the perpetration of UPBs by same-gender ex-partners demands further research to retrieve what triggers UPB in same-gender ex-partners and why they are different from opposite-gender ex-partners. Although the perpetrator's gender only moderated the effect of rumination in this study, more differential effects of the pursuer's gender can be expected for other risk factors not included in this paper. Davis et al. (2012), for instance, recently introduced a theory of coercive control that outlines gender differences in control motives underlying persistent pursuit.

The fact that UPBs often follow relationship separations and might escalate into more severe forms of stalking, calls for early detection and prevention of these behaviors and adequate treatment interventions. Marriage counselors, divorce professionals (e.g., mediators, judges, attorneys who intervene in most relationship breakups), or therapists who work with ex-partners, might bear a significant role in a first identification of post-breakup UPBs. Based on our findings, these practitioners should be equally vigilant for such harassment among male and female ex-partners and ex-partners who separate of someone of the same or opposite sex. Treatment of perpetrators is usually tailored to address their underlying idiosyncratic risk factors which are identified through an overall assessment (e.g., MacKenzie & James, 2011). Based on our findings, a *broad* assessment of risk factors related to the individual, the breakup situation, and the past relationship is favored². Our findings further support psychotherapeutic interventions that address our identified risk factors. One such intervention

² Practitioners interested in implementing this study's measures in their daily practice, can obtain the measures via the corresponding author of this article and the original authors of the questionnaires who are mentioned in the above method section.

consists of dealing with the cognitive preoccupation of former intimate stalkers by means of techniques as acceptance and commitment therapy (Scholing & Sierskma, 2005). The use of dialectal behavior therapy (Linehan, 1993), developed for individuals with borderline characteristics, also seems a promising option to reduce stalking or pursuit tactics. Our observed gender differences that, for instance, borderline traits do not predict pursuit among same-gender ex-partner, also suggests that the usefulness of certain interventions might differ according to the gender composition of ex-couples.

Finally, some methodological (dis)advantages of this study merit consideration. First, whereas previous UPB studies predominantly used college student samples in non-European, English-speaking countries (e.g., Spitzberg & Cupach, 2007), the present investigation employed a more ecological-valid sample of Flemish adult ex-partners. However, relative to the composition of De Smet et al.'s (2012) representative sample of Flemish adult ex-partners, our convenient sampling strategy and online assessment chiefly attracted younger and higher educated adults who reported on relatively short-term and mostly childless relationships. This puts constraints on the generalization of our findings to the broader population of separated adults. Related, our study merely provides estimates on the occurrence of UPBs rather than true prevalence rates. Differently, the study of risk factors of UPB perpetration not necessitates the use of representative samples. The fact that we could replicate the findings of other risk factor studies seems to support the generalizability of our results. Second, although we were able to recruit a substantial group of hard-to-reach same-gender ex-partners, these ex-partners were still underrepresented compared to our number of opposite-gender ex-partners. Third, risk factors were assessed with advanced count models that fitted the skewed distribution of reported UPBs and non-parametric tests were used to compare the occurrence of UPBs across male and female and same- and opposite-gender ex-partners. This assessment of group differences resulted in several interesting findings. Yet,

the large number of tests enhanced the risk of false positive effects. Replication of this study's preliminary findings in future research therefore seems needed. Finally, the data relied on retrospective self-reports. The self-reports of UPB perpetration were subject to self-presentation concerns, implying that future surveys better combine both the victim's and perpetrator's perspective in order to acquire accurate estimates on the occurrence of UPBs after breakup. As recall biases may have impacted upon the retrospective measures in this study, future research should also use a prospective instead of a cross-sectional design in order to obtain reliable ratings of the variables. Such prospective studies could furthermore draw definite conclusions on the causality of the currently observed effects. Despite these limitations, this study contributes to a more complete picture of pursuit behaviors that are often displayed after breaking up.

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Table I

Descriptives and Pearson Correlations of the Independent Variables (N = 631)

Variable	<i>M (SD)</i>	Range	2	3	4	5	6	7	8	9
1. Rumination	26.47(12.98)	9–63	.28***	-.19***	-.01	.04	.23***	.13**	.00	.01
2. Anxious attachment	72.10(19.16)	18–126	-	.06	-.10*	.07	.43***	.35***	.06	-.15***
3. Avoidant attachment	50.83(17.45)	18–126		-	-.38***	.15***	.15***	.12**	.09*	-.05
4. Empathy	41.66(11.05)	0–80			-	-.37***	-.17***	-.16***	-.18***	.23***
5. Psychopathic traits	132.78(23.83)	64–320				-	.36***	.44***	.54***	-.49***
6. Borderline traits	4.58(2.78)	0–10					-	.37***	.25***	-.30***
7. Narcissistic traits	153.19(19.31)	35–245						-	.22***	-.31***
8. Delinquent behavior ^a	11.72(8.83)	0–176							-	-.51***
9. Social desirability	8.08(4.46)	0–22								-
10. Initiator status	I = 39.0%, ex-partner = 49.1%, both = 11.9%									

^aNon-parametric Spearman correlation coefficients are presented for the skew distributed delinquent behavior scale.* $p < .05$. ** $p < .01$. *** $p < .001$.

Table II
Summary of the Hurdle NB Main Effects Model

Variable	Zero hurdle part		Counts part	
	<i>OR</i> (e^B)	95% CI	<i>RR</i> (e^B)	95% CI
Initiator ^a				
Ex-partner vs. I	3.47***	2.22–5.42	1.34**	1.10–1.64
Both vs. I	1.48	0.80–2.72	1.22	0.91–1.63
Both vs. ex-partner	0.43**	0.23–0.80	0.91	0.70–1.18
Rumination	2.22***	1.72–2.87	1.34***	1.22–1.47
Anxious attachment	1.23	0.96–1.57	1.14*	1.03–1.26
Avoidant attachment	0.82	0.65–1.02	0.95	0.86–1.05
Empathy	1.17	0.92–1.47	0.96	0.87–1.06
Psychopathic traits	0.92	0.70–1.22	0.95	0.84–1.07
Borderline traits	1.48**	1.16–1.89	1.15*	1.03–1.28
Narcissistic traits	1.20	0.94–1.52	0.99	0.90–1.09
Delinquent behavior	1.21	0.94–1.57	1.14*	1.02–1.26
Clinical status ^b				
Non- vs. clinical	1.08	0.65–1.80	0.99	0.81–1.21
Time since breakup ^c			1.23***	1.13–1.34
Social desirability ^c			0.90*	0.81–1.00

Note. *OR* = Odds Ratio. *RR* = Rate Ratio. CI = confidence interval. Generalized Variance Inflation Factors (for models with \geq three leveled categorical variables; Fox & Monette, 1992) = 1.05–1.48.

^aInitiator status overall contributed to the zero hurdle and counts part: respectively, $\chi^2(2, N = 631) = 31.68, p < .001$ and $\chi^2(2, n = 431) = 8.30, p = .016$.

^bThe initial significant effect of clinical status in the control variables model disappeared in this regression model. Post-hoc analyses suggested that the impact of clinical status was mediated by the significant predictors in this main effects model.

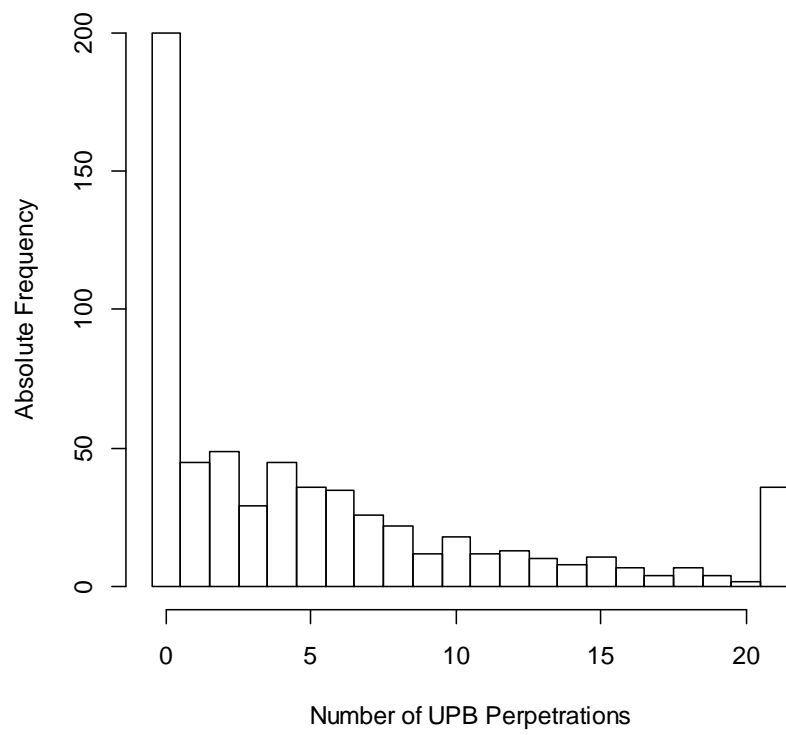
^cThese variables were insignificant in the zero hurdle part of the control variables model and therefore not included in the zero hurdle part of the present model.

* $p < .05$. ** $p < .01$. *** $p < .001$.

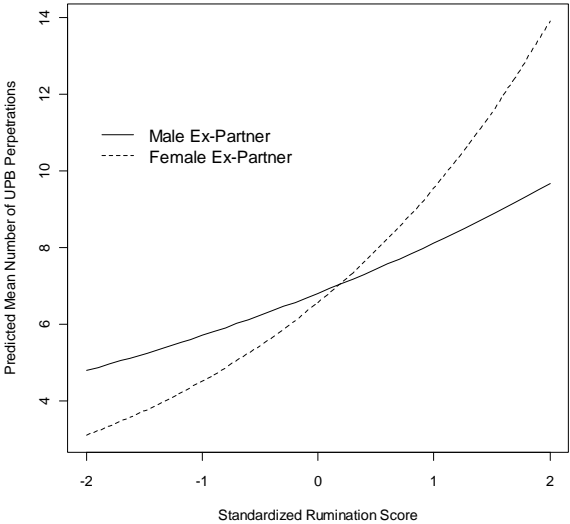
Figure Captions

Figure 1. Histogram of observed UPB perpetrations ($N = 631$, $M = 5.70$, $SD = 7.61$, range: 0–49, Skewness = 2.23, Kurtosis = 6.35).

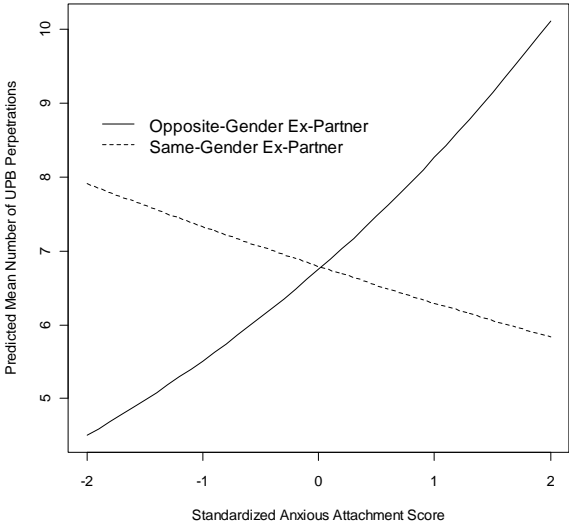
Figure 2. Plot of significant (a) Rumination x Gender of the perpetrator interaction ($RR = 1.22$, 95% CI = 1.03–1.44, $p = .018$), (b) Anxious attachment x Gender of the perpetrator's ex-partner interaction ($RR = 0.76$, 95% CI = 0.63–0.91, $p = .003$), and (c) Borderline traits x Gender of the perpetrator's ex-partner interaction ($RR = 0.83$, 95% CI = 0.69–1.00, $p = .046$).



(a)



(b)



(c)

