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ORIGINAL RESEARCH REPORT

When Your Boo Becomes a Ghost: The Association Between Breakup Strategy and Breakup Role in Experiences of Relationship Dissolution

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Ghosting, or avoiding technologically-mediated contact with a partner instead of providing an explanation for a breakup, has emerged as a relatively new breakup strategy in modern romantic relationships. The current study investigated differences in the process of relationship dissolution and post-breakup outcomes as a function of breakup role (disengager or recipient) and breakup strategy (ghosting or direct conversation) using a cross-validation design. A large sample of participants who recently experienced a breakup was collected and randomly split into two halves. Exploratory analyses were conducted in Sample A and used to inform the construction of specific hypotheses which were pre-registered and tested in Sample B. Analyses indicated relationships that ended through ghosting were shorter and characterized by lower commitment than relationships that ended directly. Recipients experienced greater distress and negative affect than disengagers, and ghosting disengagers reported less distress than direct disengagers. Ghosting breakups were characterized by greater use of *avoidance/withdrawal* and *distant/mediated communication* breakup tactics and less *open confrontation* and *positive tone/self-blame* breakup tactics. Distinct differences between ghosting and direct strategies suggest developments in technology have influenced traditional processes of relationship dissolution.

Keywords: relationship dissolution; breakup strategy; ghosting; breakup distress

Romantic partners have the ability to connect and interact through a variety of technologically-mediated platforms including online dating websites/applications, messaging applications, FaceTime, Skype, and social networking sites like Snapchat, Instagram and Facebook (McEwan, 2013; Papp, Danielewicz & Cayemberg, 2012). Many studies have focused on how the initiation, development, and maintenance of relationships have been influenced by technology. However, little research has investigated how relationships can be dissolved unilaterally by removing or preventing access to the technologically-mediated connections that once existed between partners.

Recently, a breakup strategy colloquially termed "ghosting" has come to the forefront of popular culture. Ghosting refers to instances where the disengager (the partner who initiates a breakup) unilaterally dissolves a romantic relationship by avoiding online and offline contact with the recipient (the partner who is broken up with). Specific avoidance behaviors would include not responding to phone calls or text messages and unfollowing, unfriending, or blocking the recipient on social media platforms (e.g., Tinder, Facebook, Instagram, Snapchat; LeFebvre, 2017). What distinguishes ghosting from other breakup strategies is the lack of an explicit explanation or declaration of dissolution to the breakup recipient. As a result, the ghosted partner is not immediately aware of what has happened and is left to interpret on their own what the absence of communication might mean (Freedman, Powell, Le, & Williams, 2018). While ending a relationship through avoidance may not be novel, building extensive technologically-mediated connections between partners is, meaning that dissolving relationships by severing these networks may be an increasingly typical aspect of modern relationship dissolution (LeFebvre, 2017).

Little is currently known about how the experiences of ghosting for both disengagers and recipients differ from more traditional breakups that involve an explicit expression of dissolution. The present research used a cross-validation design to investigate differences in the process and post-breakup outcomes of relationship dissolution between unilateral breakups that occurred through ghosting or through direct conversations.

Ghosting

Reports of the prevalence of ghosting in adult populations have increased in recent years. A poll conducted by YouGov and Huffington Post in 2014 surveyed 1000 US adults (52%

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female, 82% over the age of 30, 79% white), and found that approximately 13% of the responders had previously been ghosted by a partner and 11% reported having ghosted a partner themselves (Moore, 2014). More recently, Freedman et al. (2018) found that 25.3% of a sample of 554 participants (49% female, M_{age} = 33.86, SD_{age} = 10.62, 75% white) drawn from Amazon's Mechanical Turk (MTurk) had been ghosted, and 21.7% had previously ghosted a romantic partner. In a second sample from Prolific Academic (N = 747, 46% female, M_{age} = 32.64, SD_{age} = 11.59, 74% white), 23% of participants had experienced being ghosted and 18.9% reported having ghosted a romantic partner. In our exploratory study (Koessler, Kohut, & Campbell, 2019; https://osf.io/gfdzs/) which sampled 332 MTurk workers (55% female, M_{age} = 28.26, SD_{age} = 4.36, 75% white), we found 64.5% of participants reported previously ghosting a partner, and 72% reported previously having been ghosted by a partner. Only 14.2% of our sample had not had experience with ghosting. The reported prevalence rates of ghosting experiences may have been higher in our exploratory study compared to rates reported in prior research because awareness of ghosting as a breakup strategy could have increased, our participants, on average, were younger, and the MTurk advertisement explicitly stated the purpose of the study was to explore, define and describe the phenomenon of 'ghosting' as a breakup strategy. This could have attracted more participants who were familiar with ghosting to participate in the study than those who may not have heard of or experienced ghosting.

Past research identifying different types of breakup tactics (Baxter, 1982, 1984; Cody, 1982; Collins & Gillath, 2012), or that have explained the process of relationship dissolution through stage models (Knapp & Vangelisti, 2005; Rollie & Duck, 2006), have been conducted under the assumption that regardless of how a relationship is dissolved some degree of communication is involved where the recipient is informed that the disengager is ending the relationship (Sprecher, Zimmerman, & Abrahams, 2010). What makes the breakup strategy of ghosting so unique is that it introduces the possibility that explicit communication is not necessary for relationship dissolution to be successfully executed.

Much of the existing ghosting literature has used qualitative data to provide definitions and preliminary descriptive information of the phenomenon (LeFebvre et al. 2019; Koessler et al., 2019) and only one study has been published that uses a theoretical perspective to explain when ghosting is used to dissolve a romantic relationship (Freedman et al., 2018). Freedman et al. (2018) investigated the association between implicit theories of relationships and ghosting behaviors, intentions, and perceptions. They found individuals with greater destiny beliefs (i.e., the belief that relationships are stable and unchanging, and that people are either compatible or not; Knee, 1998) were more likely to have ghosted and been ghosted, more likely to use ghosting in the future, and thought less poorly of those who use ghosting to end their relationships. Individuals with higher growth beliefs (i.e., relationships are dynamic and capable of developing and improving over time; Knee, 1998) reported lower intentions to ghost in the future and believed using ghosting to end long-term relationships was less acceptable than using ghosting to end short-term relationships. Although the research by Freedman et al. (2018) represents one of the first theoretically-derived empirical investigations of the associations between attitudes towards ghosting and individual differences, our research focuses more on the process of relationship dissolution and post-breakup outcomes. Accordingly, we will discuss studies that are more directly related to the variables of interest in the current study for the remainder of the literature review.

Breakup Tactics

Whereas breakup strategies describe the crux of relationship termination, (e.g., a clear verbal or written indication that the relationship has ended would indicate a direct breakup strategy), a variety of breakup tactics have been shown to be used by disengagers, the partners who initiate breakups, leading up to final separation from their partners (Baxter, 1982, 1984; Cody, 1982). Collins and Gillath (2012) updated Baxter's (1982) breakup tactic scale to reflect the technological advancements that had been made, including caller-ID, text-messaging, and use of social networking sites. Forty-three unique breakup tactics emerged that were organized into seven factors. *Avoidance/withdrawal* tactics involve increasing distance from and decreasing signals of intimacy to the relationship partner, while in contrast, *open confrontation* tactics involve directly and honestly communicating with the relationship partner. *Manipulation* tactics involve intentionally manipulating third-party others in order to facilitate disengagement. Use of *positive tone/self-blame* tactics indicate concern for the partner's feelings, concern for their well-being, and the tendency for the disengager to take responsibility or blame for the cause of the relationship disengagement. *Cost escalation* involves making the partner's life difficult or costly, by initiating disagreements and being generally unpleasant. *De-escalation* involves the disengaging partner gradually terminating the relationship rather than ending it immediately, and *distant/mediated communication* tactics involve using technologically-mediated methods to signal the relationship is over (e.g., changing relationship status on Facebook). Like the assumption that some degree of communication exists during relationship dissolution, the severity of the indirectness of ghosting necessitates a comparison of the breakup tactics that are used prior to ghosting being implemented as a breakup strategy and tactics that are used prior to traditional breakups that end through a direct conversation.

Motivations for Breakup Strategy Choice

Research on predictors of breakup strategy choice is relatively limited (Collins & Gillath, 2012). Existing literature on the topic focuses on relationship-specific factors like intimacy and closeness, partner similarity, reasons for the breakup, social network overlap, and intentions to maintain a friendship with the ex-partner after the breakup (Banks, Altendorf, Greene, & Cody, 1987; Baxter, 1982; Cody, 1982;

Metts, Cupach, & Bejlovec, 1989; Sprecher et al., 2010). In general, direct breakups that involve explicit and honest expressions of emotion and the intent to dissolve often occur in relationships where intimacy, partner similarity, and social network overlap are high (Banks et al., 1987; Baxter, 1982; Cody, 1982). In contrast, indirect strategies involving more avoidance rather than communication are often used when intimacy is low (Banks et al., 1987; Baxter, 1982). However, the motivations that prompt disengagers to choose a certain breakup strategy over another may extend beyond the predictors examined in past research. In addition, the person initiating the breakup compared to the recipient of the breakup may perceive events differently. For example, a disengager may explain that their choice to ghost was intended to avoid hurting their partner's feelings by not telling them directly why they wanted to break up, whereas the recipient may perceive that the disengager ghosted because they did not care about their partner's feelings. Differences in motivations and perceived motivations between disengagers and recipients regarding the breakup strategy that was used to dissolve a relationship have not yet been empirically investigated.

Breakup Role

Multiple studies have found that most relationships dissolve at the request of one partner, rather than both partners (Drigotas & Rusbult, 1992; Helgeson, 1994; Hill, Rubin, & Peplau, 1976), and past research has shown that differences exist between disengagers and recipients in various post-breakup emotional outcomes (Davis, Shaver & Vernon, 2003; Field, Diego, Pelaez, Deeds, & Delgado, 2009; Hill et al., 1976; Sprecher, Felmlee, Metts, Fehr, & Vanni, 1998).

When individuals feel they have control over certain events, those events are perceived as less distressing than events that seem, or are, uncontrollable (Fiske & Taylor, 1984; Frazier & Cook, 1993). Thus, when individuals experience a breakup, the severity of the reaction to the breakup may be partially predicted by whether they initiated the breakup or whether they were the partner being broken up with. Multiple studies have found that disengagers report less breakup distress than recipients (Davis et al., 2003; Field et al., 2009; Hill et al., 1976; Morris, Reiber, & Roman, 2015; Perilloux & Buss, 2008; Sprecher, 1994; Sprecher & Fehr, 1998), and that individuals involved in relationships dissolved mutually reported less distress than those who were broken up with (Morris et al., 2015). However, Simpson (1990) found no differences between the amount of breakup distress reported by disengagers and recipients, and Fine and Sacher (1997) found greater reported distress only for males who believed their partners initiated the breakup. Mixed evidence for the association between breakup role and breakup distress should be further investigated. In addition, while breakups that involve a direct conversation offer a certain degree of closure for both partners, ghosting breakups offer closure and control to the disengager while leaving the recipient in the dark. Therefore, the association between breakup role and breakup strategy should be investigated to determine whether experiences of relationship dissolution differ based on these factors.

Post-Breakup Distress

Most individuals will experience relationship dissolution at some point in their lifetime, as many relationships form and fail before individuals find a partner with whom they develop a long-term pair bond (Buss, 2003; Fisher, 1989; Morris & Reiber, 2011). While relationship dissolution is not uncommon, especially for young adults (Sprecher & Fehr, 1998), the process nonetheless often evokes emotional reactions involving sadness, anxiety, and anger, and may evoke physical reactions such as loss of appetite and trouble sleeping (Morris & Reiber, 2011). While the end of a romantic relationship alone can cause distress, the amount of distress may vary depending on what type of breakup strategy was used and how the breakup process as a whole transpired.

As briefly mentioned above, different breakup tactics vary in degree of how compassionate they are perceived by breakup recipients. Sprecher et al. (2010) found that the breakup tactics perceived as the most uncompassionate were *manipulation, distant/mediated communication,* and *avoidance/withdrawal.* Since ghosting behaviors involve indirectly ending a relationship through avoidance and severing established technologically-mediated communication pathways, it would follow that ghosting may be perceived as an inconsiderate breakup strategy. Anecdotal accounts from popular culture articles have demonstrated that negative feelings are harbored as a result of being the recipient of ghosting (Carter, 2013; Spira, 2016), however, the consequences for both recipients and disengagers following the use of ghosting as a breakup strategy have yet to be studied empirically.

The assessment of breakup distress and negative affect have been prioritized in many studies that have investigated relationship dissolution with less attention being paid to potential positive outcomes (Sprecher, 1994; Tashiro & Frazier, 2003). Cupach's (1992) dialectical approach to relationships (as cited in Sprecher, 1994) suggests oppositional propensities can exist within various stages of relationships. Specifically, during dissolution, individuals may feel independent from their ex-partner and that sense of autonomy can be associated with positive emotions. However, despite these feelings, the desire to feel connected to one's partner may also remain which could lead to more negative feelings (Cupach, 1992). Sprecher (1994) investigated differences in post-breakup positive and negative affect between partners within the same relationship, catching a rare perspective of both sides of a breakup. Negative emotions (e.g., hurt, frustration, depression, loneliness) were experienced more intensely than positive emotions, however, positive emotions of love and relief were reported as well.

Similarly, few studies have focused on the positive life changes that can result from romantic relationship dissolution (Buehler, 1987; Helgeson, 1994; Tashiro & Frazier, 2003). While breakups have been described as one of life's most distressing events (Sprecher, 1994; Tashiro & Frazier, 2003), breakups also provide the opportunity for individuals to develop and change in constructive ways, including positive changes in self-perception and interpersonal priorities (Tashiro & Frazier, 2003). Past

research has looked at the relations between breakup role and post-breakup positive experiences and personal growth and found mixed results. Buehler (1987) found that participants who initiated a divorce were more likely to report experiences of personal growth than recipients of divorce. In contrast, Tashiro and Frazier (2003) found no significant differences between disengagers and recipients in terms of post-breakup personal growth. Prior research has not investigated possible differences in post-breakup personal growth as a function of breakup strategy. As such, the current study may reveal whether the occurrence of a direct conversation during a breakup may offer more of an opportunity to process and reflect on the dissolution, perhaps increasing the chances or speed at which the partners could recover and adjust post-breakup. Relatedly, as ghosting does not involve a breakup conversation, whether personal growth and recovery are hindered as a result would be important to determine.

Relationship Length and Commitment

As partners get to know each other, commitment typically increases as the duration of the relationship increases (Lemieux & Hale, 2002). Freedman et al. (2018) found ghosting was perceived to be more acceptable to end short term relationships than long term relationships, and ghosting was more acceptable to end relationships that only lasted two dates or less, or before physical intimacy occurred. Regarding more serious relationships, Davis (1973) suggested that due to the interdependent nature of close relationships, a direct conversation about dissolving a relationship is necessary to successfully untie partners from each other, meaning dissolving a relationship by simply fading away would be less likely to occur. Banks et. al (1987) found avoidance breakup tactics were usually implemented when intimacy and partner similarity were low. Similarly, Baxter (1982) found avoidance tactics were more likely to be used to disengage from a friendship as opposed to a close relationship. These findings suggest that as commitment and relationship length increase, it may be increasingly more difficult and less likely for ghosting to be used as a breakup strategy. However, the popular culture literature has described ghosting experiences that range from relationships that had not yet moved offline (if initiated online; Hardwick, n.d.) to those that had existed for months or years (Samakow, 2014). Exploring the associations between these relationship qualities and the occurrence of ghosting may inform whether ghosting is a breakup strategy that is more commonly utilized in relationships where individuals are not yet notably committed, invested, or exclusively tied to their partners. Due to the importance of relationship length and commitment on experiences of relationship dissolution, the influence of these potential covariates will be beneficial to explore.

Potential Benefits of Ghosting

Ghosting may be a breakup strategy that allows the disengager to avoid feeling like they are actively hurting the recipients by not having to directly communicate that they are no longer interested in a relationship. Ghosting distances the disengager from the recipient to the extent that they may not be aware of or affected by the recipients' distress, perhaps making post-dissolution adjustment easier for the disengager. In addition, the ease with which ghosting can be implemented seems to be a prominent theme in popular culture articles (Coen, 2015; Crotty, 2014). Disconnecting from recipients can occur with a few button clicks, through blocking numbers, unmatching on online dating sites and unfollowing or unfriending on social media. Indeed, the ease and effectiveness of ghosting may make use of this strategy more attractive.

Although it seems unlikely, some breakup recipients might even prefer to be ghosted as opposed to being directly rejected online or in-person. Individuals who may not have been attached to the relationship or to the partner may not feel like a direct explanation was needed and may even interpret ghosting as a move intended to spare their feelings, or it as a breakup strategy that is now a normative aspect and risk of the modern dating world (Crotty, 2014; Samakow, 2014). Further exploration of the potential advantages to both implementing ghosting and being a recipient of ghosting is necessary to gain a greater understanding of this phenomenon.

Current Study

In this study, we compare the process of relationship dissolution and post-breakup outcomes as a function of breakup role (disengager or recipient) and breakup strategy (ghosting or direct conversation) using a cross-validation design. A large sample of participants who had recently broken up with a partner directly (direct disengagers), broken up with a partner through ghosting (ghosting disengagers), were broken up with directly (direct recipients) or were broken up with through ghosting (ghosting recipients) was collected and each group was randomly split into two halves. Sample A was used to conduct focused explorations of our variables of interest, specifically, breakup tactic use, motivation for breakup strategy choice, post-breakup distress, positive and negative affect, and post-breakup personal growth. Results of Sample A were used to inform the construction of specific confirmatory hypotheses which were pre-registered and tested in Sample B.

Methods

Study Preregistration

This study was pre-registered on the Open Science Framework (OSF; https://osf.io/t9z6j/), and all materials and documents created during the course of the study are publicly available (link: https://osf.io/t6q4s/). The study was approved by the University of Western Ontario Non-Medical Research Ethics Board.

Participants

We conducted an a priori power analysis using the G*Power application (Version 3.1.9.2; Faul, Erdfelder, Lang, & Buchner, 2007) and found a sample size of 296 was required to detect an effect size of *Cohen's f* = .20, our smallest effect size of interest (Lakens, 2015) with 90% power. We aimed to collect at least 296 participants each for Sample A and Sample B. A detailed account of our input parameters for this power analysis can be found in our Open Notebook document on the OSF (https://osf.io/3n964/).

Participants were recruited through Amazon's Mechanical Turk (MTurk). Interested participants between the ages of 18 and 35 had to have experienced a non-mutual breakup with a romantic partner in the past six months that ended through either a direct conversation or through ghosting, be fluent English speakers, reside in the United States or Canada, and have an active MTurk account with at least 97% approval from previous requesters. The survey took between 15 and 30 minutes to complete, and participants were compensated with $0.50 USD for their participation.

Of the 676 participants who completed the study, 595 participants met all of the eligibility criteria and were included in the final sample. The SPSS row numbers for each participant in each condition (direct disengagers, direct recipients, ghosting disengagers, ghosting recipients) were randomly assigned to either the exploratory (Sample A) or confirmatory sample (Sample B). Demographic characteristics are shown in **Table 1**. No significant demographic differences were found between Sample A and Sample B.

Table 1: Demographic characteristics of Sample A and Sample B.

Demographic	Sample A	Sample B	χ^2, *t*	df	*p*
Condition (*N*)	299	296			
Direct Disengagers	75	74			
Direct Recipients	74	74			
Ghosting Disengagers	75	74			
Ghosting Recipients	75	74			
Age, *M*(*SD*)	25.87 (4.13)	25.64 (4.09)	0.69	593	.49
Gender			0.46	1	.50
Male	131 (43.8%)	122 (41.2%)			
Female	166 (55.5%)	173 (58.4%)			
Non-specified*	2 (0.7%)	1 (0.3%)			
Sexual Orientation			2.03	2	.36
Heterosexual	250 (83.6%)	245 (82.8%)			
Lesbian/Gay	15 (5.1%)	13 (4.4%)			
Bisexual	27 (9.2%)	38 (12.8%)			
Other*	7 (2.3%)	0 (0%)			
How Partners Met			1.41	4	.84
Online dating site/app	106 (35.5%)	101 (34.1%)			
By chance in person	68 (22.7%)	64 (21.6%)			
Through friend/family	58 (19.4%)	64 (21.6%)			
At school/work	63 (21.1%)	60 (20.3%)			
Other	4 (1.3%)	7 (2.4%)			
Relationship Type			1.06	2	.59
Serious/Exclusively Dating	195 (65.2%)	193 (65.2%)			
Casual/Non-exclusively dating	82 (27.4%)	78 (26.4%)			
Friends-with-Benefits/Casual Sex	16 (5.4%)	22 (7.4%)			
Other*	6 (2.0%)	3 (1.0%)			
Commitment, *M*(*SD*)	5.08 (1.61)	5.17 (1.51)	–0.70	593	.49
Relationship Length (weeks), *M*(*SD*)	31.12 (25.68)	32.13 (25.62)	–0.48	592	.63
Time Elapsed Since Breakup			5.70	3	.13
Less than 1 week	19 (6.4%)	9 (3.0%)			
Between 1 week and 1 month	53 (17.7%)	68 (23.0%)			
Between 1 month and 3 months	110 (36.8%)	110 (37.2%)			
Between 3 months and 6 months	117 (39.1%)	109 (36.8%)			

Note: Commitment was measured on a scale of 1 (*not at all committed*) to 7 (*very committed*). Demographic categories marked with an asterisk (*) indicate that category was omitted from the chi-square analysis for having categories with expected cell counts less than 5.

Materials

Demographics and relationship dissolution. Participants reported their age, gender, English fluency, sexual orientation, current relationship status, race, and religious affiliation. Participants were asked to answer questions about one experience of relationship dissolution with a recent romantic partner who they stopped being involved with in the past six months. Participants reported how long ago their relationship ended and how they met their partner (online dating site/app, by chance in person, through a friend or family member, at school or work, or other). In addition, participants reported how long their relationship lasted, how committed they were to their partner on a scale of 1 (*not at all committed*) to 7 (*very committed*), and how they characterized their relationship with their partner at the time of the breakup (friend with benefits, casually/non-exclusively dating, seriously/exclusively dating, or other). Participants then reported who initiated the breakup (self/disengager or partner/recipient) and how the breakup occurred ("I had a direct conversation with my partner"/"My partner had a direct conversation with me" or "I ghosted my partner"/"My partner ghosted me"). Ghosting was defined as "the act of ending a relationship with a partner with whom romantic interest and attraction once existed by avoiding any type of communication and/or contact with that partner." Participant responses to these questions determined their condition (e.g., if a participant reported that they broke up with their partner and they did so directly, they would be classified as a direct disengager).

Breakup tactics (BSQ). A 7-factor breakup tactics questionnaire (Collins & Gillath, 2012) was adapted for the current study to assess to what extent each breakup tactic was used during the process of relationship dissolution. The scale was altered to offer a dichotomous choice, (1 = *Yes, this tactic was used*, 0 = *No, this tactic was not used*) and one reverse-scored item from the original scale was removed. Participants who initiated their breakups (disengagers) reported whether they used each behavior to facilitate the breakup with their partner. In contrast, participants who were broken up with (recipients) reported whether they noticed their partner using each behavior. We calculated the proportion of use of each breakup tactic by averaging the total number of behaviors used (or perceived to be used) within a certain breakup tactic factor. Proportions ranged from 0 to 1, with higher proportions indicating greater use of a breakup tactic. Reliability estimates were calculated separately for disengagers and recipients in Sample A and Sample B. Reliability (Cronbach's alpha) of the breakup tactic factors ranged from .61 to .88. Cronbach's alpha values for specific tactics can be found on the OSF (https://osf.io/r9wnu/).

Motivation for breakup strategy choice (MBSC). Potential motivations for choosing each breakup strategy were crafted by the researchers. Items reflecting motivations for ghosting were informed by open-ended responses provided in an earlier study (https://osf.io/2bx9j/) by 285 MTurk participants aged 18–35 who reported ghosting others, being ghosted or both. Exploratory factor analyses were conducted on the ghosting and direct conversation MBSC items using the full sample in order to ensure that comparisons could be made between the two subsamples once the scales were created. In the interest of brevity, detailed explanations of the factor analyses for the ghosting and direct MBSC scales will not be outlined here but can be found on the OSF (https://osf.io/3wqt8/).

The motivation scale for direct conversation breakups contained 13 items and had a three-factor structure: *gentle breakup* ($\alpha_{\text{disengager}}$ = .79, $\alpha_{\text{recipient}}$ = .83), *clarity and understanding* ($\alpha_{\text{disengager}}$ = .82, $\alpha_{\text{recipient}}$ = .82), and *disinterest* ($\alpha_{\text{disengager}}$ = .70, $\alpha_{\text{recipient}}$ = .55). The motivation scale for ghosting breakups contained 13 items and had a four-factor structure: *avoidance* ($\alpha_{\text{disengager}}$ = .84, $\alpha_{\text{recipient}}$ = .82), *disinterest*[1] ($\alpha_{\text{disengager}}$ = .76, $\alpha_{\text{recipient}}$ = .45), *guilt* ($\alpha_{\text{disengager}}$ = .63, $\alpha_{\text{recipient}}$ = .49), and *anticipated a difficult breakup* ($\alpha_{\text{disengager}}$ = .68, $\alpha_{\text{recipient}}$ = .51). For each breakup strategy two versions of the scale were created, one for disengagers and one for recipients. Disengagers were instructed to indicate to what extent each motivation affected their decision to break up with their partner through direct conversation/ghosting, while recipients were asked to indicate to what extent they believed each of the motivations affected their partner's decision to break up with them through direct conversation/ghosting. In addition, disengagers were asked to focus on what motivated their decision to break up with their partner in the way that they did, rather than why they no longer wanted to be in a relationship with their partner in general. Recipients were given a similar reminder. Participants rated the extent to which each motivation affected the decision to use a certain breakup strategy on a scale of 1 (*did not affect my/my partner's decision at all*) to 7 (*extremely affected my/my partner's decision*). The items within each factor were averaged to create an overall score for that motivation. Higher averages indicated that a certain motivation was more influential in the decision to use a specific breakup strategy.

Breakup distress scale (BDS). Participants completed a 16-item Breakup Distress Scale (Field et al., 2009) which assessed the extent that they felt a certain way when their relationship ended (1 = *not at all*, 4 = *very much so*). Items were averaged to obtain a breakup distress score, with higher scores indicating greater distress at the time of the breakup ($\alpha_{\text{Sample A}}$ = .96, $\alpha_{\text{Sample B}}$ = .96).

Breakup emotions scale (BES). Participants completed Sprecher's (1994) Breakup Emotions Scale ($\alpha_{\text{Sample A}}$ = .72, $\alpha_{\text{Sample B}}$ = .74). Participants rated the degree to which they experienced nine negative valence emotions (e.g., anger, frustration) and six positive valence emotions (e.g., relief, satisfaction) on a 7-point scale (1 = *not at all*, 7 = *extremely*). The breakup emotions index was calculated by taking the difference between the average of the positive emotions and the average of the negative emotions. Positive scores indicated negative emotions were experienced to a greater degree, and negative scores indicated positive emotions were experienced to a greater degree.

Post-breakup recovery scale (PBRS). Participants completed the 21-item Posttraumatic Growth Inventory (Tedseschi & Calhoun, 1996) modified by Tashori and Frazier (2003) to measure how much life change had been experienced in different areas as a result of a romantic

relationship breakup ($\alpha_{\text{Sample A}}$ = .95, $\alpha_{\text{Sample B}}$ = .96). Items were rated on a scale of 1 (*I did not experience this*) to 6 (*I experienced this to a very great degree*). All items were averaged to obtain an overall post-breakup recovery and growth score, with higher scores indicating greater experiences of or a greater variety of benefits resulting from the process of post-breakup recovery and growth.

Procedure

Four recruitment ads, one for each study condition (direct disengager, direct recipient, ghosting disengager, ghosting recipient), were posted to MTurk to allow the researchers to closely monitor how many participants were collected from each condition. Participants recruited from MTurk followed a link to a Qualtrics survey that was completed entirely online. Participants who satisfied the eligibility criteria were shown a letter of information and then gave implied consent by continuing with the survey. Participants answered demographic questions followed by questions about how their breakup occurred. Participants then completed the Breakup Strategies Questionnaire (Collins & Gillath, 2012), the Motivation for Breakup Strategy Choice questionnaire (created by the researchers for the current study), the Breakup Distress Scale (Field et al., 2009), the Breakup Emotions Scale (Sprecher, 1994), and finally the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996). Lastly, participants were shown a debriefing form and the individualized HIT code submitted through MTurk to claim payment for completing the task. Participants who finished the survey were assigned a qualification code through MTurk that prevented them from completing the survey for a different condition. The detailed procedure of assigning qualification codes can be found on the OSF (https://osf.io/q97e3/).

Data Analytic Plan

A portion of the exploratory analyses in Sample A was pre-registered on the OSF before the analyses were conducted (https://osf.io/n3gaf/). The analyses in Sample B were pre-registered as part of the OSF pre-registration challenge (https://osf.io/8r6t9/). The analyses reported below follow our pre-registered detailed data analytic plan, including checking assumptions and transforming variables where necessary. All analyses conducted that were not pre-registered are clearly described and labeled as exploratory.

Results

The following analyses were conducted with SPSS (Version 25.0, IBM Corp.). A series of 2 × 2 factorial ANOVAs were conducted to assess whether use of certain breakup tactics, breakup distress, positive and negative emotions, and post-breakup personal growth and recovery were associated with breakup strategy (direct or ghosting), breakup role (disengager or recipient) or the interaction between strategy and role. Two MANOVAs (and subsequently, Welch's robust tests of equality of means) were conducted to assess differences between disengagers' self-reported and recipients' perceived motivations for breakup strategy choice for relationships that either ended directly or through ghosting.

Preliminary data screening was done to assess whether the assumptions of factorial ANOVA or MANOVA were seriously violated prior to conducting the following analyses, respectively. Histograms of all the dependent variables were obtained, and skewness and kurtosis values that exceeded −1.5 or 1.5 (Tabachnick & Fidell, 2007) were noted, however, no adjustments were made unless Levene's test of homogeneity of variance (factorial ANOVA) or Box's *M* test (MANOVA) were also violated. For the following analyses, all assumptions were satisfied unless otherwise specified. The adjustments made to account for violations of assumptions are described where necessary.

Sample A

Breakup tactics. The means and standard deviations of each breakup tactic are shown in **Table 2**. A significant effect of breakup role emerged for *avoidance/withdrawal* [$F(1, 295) = 4.96$, $p = .027$, $\omega^2 = .011$] and *de-escalation* [$F(1, 295) = 10.53$, $p = .001$, $\omega^2 = .031$], such that disengagers reported using more of these tactics than recipients perceived their partners to use. In contrast, a significant effect of breakup strategy emerged for *avoidance/withdrawal* [$F(1, 295) = 49.36$, $p < .001$, $\omega^2 = .137$], *distant/mediated communication* [$F(1, 295) = 92.27$, $p < .001$, $\omega^2 = .282$], and *manipulation* [$F(1, 295) = 8.06$, $p = .005$, $\omega^2 = .023$] such that use of these tactics was reported more in ghosting breakups while *open confrontation* [$F(1, 295) = 293.58$, $p < .001$, $\omega^2 = .491$] and *positive tone/self-blame* [$F(1, 295) = 56.12$, $p < .001$, $\omega^2 = .156$] were reported more in direct breakups. Levene's test of homogeneity of variance was violated for *cost escalation*. A square root transformation was applied to the variable to correct for the positive skew of the distribution (Tabachnick & Fidell, 2007). A significant interaction emerged between breakup strategy and role [$F(1, 295) = 9.14$, $p = .003$, $\omega^2 = .026$], such that ghosting disengagers reported using more *cost escalation* tactics significantly more than ghosting recipients perceived, while direct disengagers and recipients reported using/perceiving similar amounts of *cost escalation*, however, this difference was marginally significant ($p = .061$).

Breakup motivations. A MANOVA was planned to analyze the differences in the motivation factors of the Direct MBSC as a function of breakup role. Intercorrelations between the factors ranged from .083 to .332 and were deemed not sufficiently large enough to raise concern about multicollinearity. Though Box's *M* test was not significant, the third factor, *disinterest*, violated Levene's test of homogeneity of variance. As a conservative measure, a series of one-way Welch's robust tests of equality of means, which are more resilient when data violates assumptions (Field, 2013), were conducted in place of a MANOVA.

Specifically, consistent ratings were given between disengagers and recipients regarding the influence of motivations to facilitate a *gentle breakup* (*Welch's* $F(1, 144.86) = 1.50$, $p = .223$) and the influence of the disengager feeling *disinterest* (*Welch's* $F(1, 143.61) = .041$, $p = .839$). However, disengagers reported *clarity and understanding* as significantly more influential in their decision to have a direct breakup than recipients

Table 2: Descriptive statistics of the breakup tactic factors of Sample A.

	Direct		Ghosting		Total	
	M	***SD***	***M***	***SD***	***M***	***SD***
Avoidance/Withdrawal						
Disengager	.417	.268	.679	.250	.548	.290
Recipient	.403	.270	.560	.242	.482	.267
Total	.410	.268	.619	.252	.515	.280
Open Confrontation						
Disengager	.790	.285	.203	.304	.497	.416
Recipient	.713	.283	.160	.278	.435	.394
Total	.752	.285	.182	.291	.466	.405
Distant/Mediated Communication						
Disengager	.193	.277	.513	.305	.353	.332
Recipient	.220	.292	.547	.290	.384	.333
Total	.206	.284	.530	.297	.369	.332
De-escalation						
Disengager	.365	.300	.405	.303	.385	.301
Recipient	.287	.259	.267	.295	.277	.277
Total	.326	.282	.336	.306	.331	.294
Positive Tone/Self-Blame						
Disengager	.517	.304	.270	.277	.393	.315
Recipient	.479	.312	.218	.281	.348	.323
Total	.498	.307	.244	.279	.371	.319
Cost Escalation						
Disengager	.247	.271	.420	.347	.333	.322
Recipient	.362	.347	.287	.307	.324	.328
Total	.304	.315	.353	.333	.329	.325
Manipulation						
Disengager	.189	.248	.317	.279	.253	.271
Recipient	.170	.268	.221	.293	.196	.281
Total	.180	.258	.269	.289	.225	.277

Note: The descriptive statistics for *cost escalation* are not transformed for ease of interpretation.

Table 3: Mean scores and standard deviations for factors of the Direct MBSC and Ghosting MBSC as a function of breakup role in Sample A.

Role	**Direct MBSC Factors**			**Ghosting MBSC Factors**			
	Gentle	**Clarity**	**Disinterest**	**Avoidance**	**Disinterest**	**Guilt**	**Difficulty**
	M (SD)	***M (SD)***	***M (SD)***	***M (SD)***	***M (SD)***	***M (SD)***	***M (SD)***
Disengager	4.23 (1.35)	5.29 (1.27)	3.02 (1.54)	4.62 (1.33)	4.64 (1.58)	3.84 (1.58)	4.25 (1.56)
Recipient	3.94 (1.51)	4.56 (1.47)	3.07 (1.30)	4.79 (1.38)	4.04 (1.12)	3.55 (1.64)	2.90 (1.49)

Note: Gentle = gentle breakup, Clarity = clarity and understanding, Difficulty = anticipated a difficult breakup.

perceived, *Welch's F*(1, 143.41) = 10.50, p = .001, *est.* ω^2 = .060. See **Table 3** for descriptive statistics.

A MANOVA was planned to analyze the differences in the motivation factors of the Ghosting MBSC as a function of breakup role. Preliminary data screening indicated that intercorrelations between the factors ranged from .051 to .325 and were deemed not sufficiently large enough to raise concern about multicollinearity. Box's *M* test was

significant, meaning the assumption of homogeneity of variance/covariance matrices across conditions was not satisfied. In addition, the second factor, *disinterest*, violated Levene's test of homogeneity of variance. A series of one-way Welch's robust tests of equality of means was conducted for each factor to adjust for the inequality of variances.

Disengagers and recipients did not differ in their ratings of the influence of *avoidance* (*Welch's* $F(1, 147.82) = .643$, $p = .424$) or *guilt* (*Welch's* $F(1, 147.74) = 1.25$, $p = .266$) motivations in contributing to the disengagers' decision to ghost their partners. A significant inconsistency regarding the influence of the disengager feeling *disinterested* was found, such that disengagers reported these motivations to be more influential than recipients perceived them to be, *Welch's* $F(1, 133.77) = 7.21$, $p = .008$, *est.* $\omega^2 = .040$ (see **Table 3**). In addition, disengagers reported motivations representing the *anticipated a difficult breakup* factor as significantly more influential in their decision to ghost their partners than recipients believed, *Welch's* $F(1, 147.73) = 29.58$, $p < .001$, *est.* $\omega^2 = .160$.

Post-breakup outcomes. Recipients experienced significantly greater distress [$F(1, 295) = 85.91$, $p < .001$, $\omega^2 = .217$] and negative affect [$F(1, 295) = 181.13$, $p < .001$, $\omega^2 = .371$] than disengagers (see **Table 4**). Similarly, significant interactions with small effect sizes were found between breakup strategy and role for breakup distress [$F(1, 295) = 3.92$, $p = .049$, $\omega^2 = .007$] and negative affect [$F(1, 295) = 4.77$, $p = .030$, $\omega^2 = .008$]. Recipients experienced similar amounts of breakup distress and negative affect across breakup strategy, but direct disengagers experienced significantly greater distress than ghosting disengagers.

Table 4: Descriptive statistics of the BDS, BES, and PBRS of Sample A.

	Direct		Ghosting		Total	
	M	***SD***	***M***	***SD***	***M***	***SD***
BDS						
Disengager	2.12	.75	1.77	.70	1.95	.74
Recipient	2.74	.76	2.73	.73	2.73	.74
Total	2.42	.81	2.25	.86	2.34	.84
BES						
Disengager	–0.12	1.87	–0.98	1.89	–0.55	1.92
Recipient	2.35	1.83	2.45	1.99	2.40	1.90
Total	1.11	2.22	.73	2.59	.92	2.42
PBRS						
Disengager	3.58	1.07	3.41	1.07	3.50	1.07
Recipient	3.39	1.08	3.28	1.26	3.34	1.17
Total	3.49	1.07	3.35	1.17	3.42	1.12

Note: BDS = Breakup Distress Scale (1 = *not at all*, 4 = *very much so*), BES = Breakup Emotions Scale (1 = *not at all*, 7 = *extremely*), PBRS = Post-breakup Recovery Scale (1 = *I did not experience this*, 6 = *I experienced this to a very great degree*). Negative scores on the BES represent more positive emotions. Positive scores on the BES represent more negative emotions.

Direct breakups elicited greater distress than ghosting breakups [$F(1, 295) = 4.22$, $p = .041$, $\omega^2 = .008$], however, no significant difference emerged in terms of positive and negative affect [$F(1, 295) = 3.09$, $p = .080$, $\omega^2 = .004$]. No main effects or interactions were significant for post-breakup personal growth and recovery.

Covariate explorations. A significant main effect of breakup strategy emerged when relationship length was treated as a dependent variable, such that breakups that ended through ghosting ($M_{weeks} = 25.16$, $SD_{weeks} = 25.46$) were significantly shorter than relationships that ended directly ($M_{weeks} = 37.16$, $SD_{weeks} = 24.54$), $F(1, 294) = 17.10$, $p < .001$, $\omega^2 = .051$.

When commitment was treated as a dependent variable a main effect of breakup strategy was found, such that relationships that ended through direct conversations ($M = 5.58$, $SD = 1.46$) had significantly higher reported commitment than relationships that ended through ghosting ($M = 4.57$, $SD = 1.59$), $F(1, 294) = 35.08$, $p < .001$, $\omega^2 = .096$. In addition, a main effect of breakup role was significant, such that recipients ($M = 5.44$, $SD = 1.39$) reported significantly greater commitment prior to the breakup than disengagers ($M = 4.71$, $SD = 1.72$), $F(1, 295) = 18.36$, $p < .001$, $\omega^2 = .049$.

When relationship length and commitment were independently added as covariates, a few notable changes in statistical significance emerged. The significant main effect of breakup strategy and the interaction between breakup role and breakup strategy on breakup distress became non-significant. The interaction between breakup strategy and breakup role for positive and negative affect remained statistically significant when relationship length was added as a covariate but became non-significant when commitment was added as a covariate. No significant main effects or interactions were found for post-breakup personal growth when there were no covariates or when relationship length was added as a covariate, however, a significant main effect of breakup role emerged when commitment was added as a covariate, such that disengagers ($M = 3.50$, $SD = 1.07$) reported significantly greater post-breakup personal growth than recipients ($M = 3.34$, $SD = 1.17$), $F(1, 292) = 6.95$, $p = .009$, $\omega^2 = .020$. All other main effects and interactions were not affected by adding relationship length or commitment as covariates. A table of *F* statistics, *p*-values and effect sizes of each factorial ANOVA with and without covariates can be found in the supplementary materials on the OSF (https://osf.io/r9wnu/).

Sample B

Sample A was intended as a focused exploration of the influence of breakup strategy and breakup role on a variety of dependent variables relevant to the experience of a romantic relationship breakup. As the purpose of the exploration was to observe what differences emerged, the experiment-wise alpha level was not controlled, meaning Type I error was left unrestrained. All analyses from Sample A were conducted again in Sample B, but 15 confirmatory hypotheses were chosen to be tested with the experiment-wise alpha level constrained to .05 to

increase our confidence in the existence and strength of the significant results.

The Bonferroni-Holm correction method (Cramer et al., 2016; Hartley, 1955) was implemented to maintain an experiment-wise Type I error rate of 5%. Following the Bonferroni-Holm method, all the *p*-values for each confirmatory analysis were ordered from smallest to largest. The alpha level (.05) was divided by the total number of confirmatory tests (15) and compared to the smallest of the *p*-values. Obtained p-values lower than the pre-determined alpha level for each respective analysis indicated statistical significance. If the *p*-value is smaller than the alpha, the null hypothesis is rejected. The next smallest *p*-value is then compared to alpha (.05) divided by one less test than before (15 – 1 = 14). Again, the obtained *p*-value is compared to that alpha level and the null hypothesis is either rejected or retained. Each subsequent hypothesis was tested in this manner until the null hypothesis was unable to be rejected. At this point, no other hypotheses were tested, and it was concluded that the remaining hypotheses had inadequate support to reject the null.

The confirmatory hypotheses in Sample B were chosen by organizing each analysis from Sample A in ascending order by degree of statistical significance. Analyses tested again in Sample B represent the specific hypotheses we were willing to "bet on" reappearing (https://osf.io/t9z6j/). A summary of the confirmatory hypotheses tested in Sample B can be found in **Table 5**, followed by a detailed explanation of the significant effects that emerged across both samples. Exploratory analyses that emerged as significant in Sample B that were not found in Sample A are also described.

Breakup tactics. Significant effects of breakup strategy emerged for *avoidance/withdrawal* [**H1.1a**; $F(1, 292) = 18.59$, $p < .001$, $\omega^2 = .055$] and *distant/mediated communication* [**H1.3**; $F(1, 292) = 72.05$, $p < .001$, $\omega^2 = .201$], such that these tactics were used significantly more often in ghosting breakups (see **Table 6**). In contrast, *open confrontation* [**H1.2**; $F(1, 292) = 345.59$, $p < .001$, $\omega^2 = .553$] and *positive tone/self-blame* [**H1.5**; $F(1, 292) = 90.03$, $p < .001$, $\omega^2 = .231$] were used significantly more in relationships that ended directly. Levene's test for *open confrontation* and *positive tone/self-blame* was significant. To adjust for the positive skew of the distributions a square root transformation was applied to the scores, however, Levene's test remained significant. Due to the equal number of participants in each group and factorial ANOVAs being generally robust to violations of assumptions (Field, 2013), the transformed scores were used in the analyses reported here. Relationships that ended through ghosting were expected to elicit greater reports of *manipulation* tactics than relationships that ended directly (**H1.7**), however, no significant differences were found.

A main effect of breakup role was hypothesized to emerge for *avoidance/withdrawal* (**H1.1b**) and *de-escalation* (**H1.4**), however, no significant differences emerged between disengagers and recipients for use or perceived use of these tactics. Additionally, an interaction was hypothesized to emerge for *cost escalation* (**H1.6**). Levene's test was violated but became non-significant after applying a square root transformation. Despite the obtained *p*-value being below .05, it was not less than the alpha level dictated by the Bonferroni-Holm correction, therefore, insufficient evidence was found in support of

Table 5: Summary of confirmatory hypotheses tested in Sample B.

Hypothesis	Dependent Variable	Factor, Interaction or Group	Sample A *p* Value	Sample B *p* Value	α_{adj} BH	H_0
1.1a	Avoidance/Withdrawal	Strategy	<.001	<.001	.0033	Rejected
1.2	Open Confrontation	Strategy	<.001	<.001	.0036	Rejected
1.3	Distant/Mediated Communication	Strategy	<.001	<.001	.0038	Rejected
1.5	Positive Tone/Self-blame	Strategy	<.001	<.001	.0042	Rejected
2.2a	MBSC-Ghosting, Disinterest	Role	.008	<.001	.0045	Rejected
3.1	Breakup Distress	Role	<.001	<.001	.005	Rejected
4.1	Breakup Emotions	Role	<.001	<.001	.0056	Rejected
2.1	MBSC-Direct, Clarity and Understanding	Role	.001	.001	.0063	Rejected
1.6	Cost Escalation	Interaction	.003	.029	.0071	Retained
2.2b	MBSC-Ghosting, Anticipated Difficult Breakup	Role	<.001	.07	.0083	Retained
1.6a	Cost-Escalation Pairwise Comparison	Disengagers	.005	.110	.01	Retained
1.6b	Cost-Escalation Pairwise Comparison	Recipients	.149	.133	.0125	Retained
1.1b	Avoidance/Withdrawal	Role	.03	.179	.0167	Retained
1.7	Manipulation	Strategy	.005	.451	.025	Retained
1.4	De-escalation	Role	.001	.477	.05	Retained

Note: Rows are in ascending order based on Sample B *p* values. α_{adj} BH = alpha adjusted after the Bonferroni-Holm correction.

Table 6: Descriptive statistics of the breakup tactics factors of Sample B.

Tactics	Direct		Ghosting		Total	
	M	*SD*	*M*	*SD*	*M*	*SD*
Avoidance/Withdrawal						
Disengager	.449	.289	.654	.279	.551	.301
Recipient	.464	.311	.548	.270	.506	.293
Total	.457	.299	.601	.279	.529	.298
Open Confrontation						
Disengager	.750	.326	.142	.278	.446	.429
Recipient	.726	.318	.118	.231	.422	.412
Total	.738	.321	.130	.255	.434	.420
Distant/Mediated Communication						
Disengager	.206	.272	.480	.286	.343	.310
Recipient	.179	.282	.487	.333	.333	.344
Total	.193	.277	.483	.310	.338	.327
De-escalation						
Disengager	.324	.266	.335	.316	.330	.291
Recipient	.346	.309	.265	.281	.305	.297
Total	.335	.288	.300	.300	.318	.294
Positive Tone/Self-Blame						
Disengager	.497	.296	.234	.274	.366	.314
Recipient	.447	.273	.153	.217	.300	.286
Total	.472	.285	.194	.250	.333	.302
Cost Escalation						
Disengager	.274	.278	.378	.347	.326	.318
Recipient	.395	.346	.292	.284	.344	.320
Total	.335	.319	.335	.319	.335	.318
Manipulation						
Disengager	.219	.267	.208	.268	.214	.267
Recipient	.165	.246	.222	.266	.193	.257
Total	.192	.258	.215	.266	.203	.262

Note: The descriptive statistics for *cost escalation, open confrontation,* and *positive tone/self-blame* are not transformed for ease of interpretation.

this hypothesis. The hypothesized pairwise comparisons were conducted as planned and were found to be in the expected direction such that ghosting disengagers reported higher use than direct disengagers (**H1.6a**) and direct recipients reported greater perceived use than ghosting recipients (**H1.6b**), however, both comparisons were non-significant.

Breakup motivations. Preliminary data screening for the Direct MBSC before a one-way MANOVA was conducted indicated that the intercorrelations between the factors ranged from –.102 to .444 and were deemed not sufficiently large enough to raise concern about multicollinearity. Box's *M* test was significant, meaning the assumption of homogeneity of variance/covariance matrices across conditions was violated. Due to this violation, a series of one-way Welch's robust tests of equality of means was conducted instead (in line with what was planned in the pre-registered data analytic plan, https://osf.io/8r6t9/). Direct disengagers reported that ensuring *clarity and understanding* during the breakup was a much more influential motivation for having a direct breakup conversation than recipients perceived it to be [**H2.1**; *Welch's F*(1, 139.02) = 11.21, p = .001, *est.* ω^2 = .065]. Means and standard deviations for each Direct MBSC factor are shown in **Table 7**.

For the Ghosting MBSC, intercorrelations between the factors ranged from .170 to .422 and were deemed not sufficiently large enough to raise concern about multicollinearity. However, Box's *M* test was significant so a series of one-way Welch's robust tests of equality of

means was conducted. Ghosting disengagers reported being *disinterested* as a more influential factor in their decision to ghost their partners than recipients believed [**H2.2a**; *Welch's* $F(1, 143.80) = 12.79$, $p < .001$, *est.* $\omega^2 = .074$]. Contrary to expectations, disengagers did not rate the *anticipated a difficult breakup* factor as more influential than recipients perceived [**H2.2b**; *Welch's* $F(1, 136.55) = 3.32$, $p = .070$]. Means and standard deviations for each Ghosting MBSC factor are shown in **Table 7**.

Post-breakup outcomes. As expected, breakup recipients reported experiencing greater distress [**H3.1**; $F(1, 292) = 104.71$, $p < .001$, $\omega^2 = .657$] and greater negative affect [$F(1, 292) = 264.89$, $p < .001$, $\omega^2 = .964$] than breakup disengagers (see **Table 8**).

Covariate explorations. A significant main effect of breakup strategy emerged when relationship length was treated as a dependent variable, such that breakups that ended through ghosting ($M_{weeks} = 26.03$, $SD_{weeks} = 25.69$) were significantly shorter than relationships that ended directly ($M_{weeks} = 38.23$, $SD_{weeks} = 24.14$), $F(1, 292) = 17.62$, $p < .001$, $\omega^2 = .053$.

When commitment was treated as a dependent variable a main effect of breakup strategy was found, such that relationships that ended through direct conversation ($M = 5.52$, $SD = 1.35$) had significantly higher reported commitment than relationships that ended through ghosting ($M = 4.81$, $SD = 1.58$), $F(1, 292) = 18.25$, $p < .001$, $\omega^2 = .052$. In addition, a main effect of breakup role was significant, such that recipients ($M = 5.47$, $SD = 1.40$) reported significantly greater commitment than disengagers ($M = 4.86$, $SD = 1.55$), $F(1, 292) = 13.11$, $p < .001$, $\omega^2 = .037$. The interaction between breakup strategy and breakup role was also significant, $F(1, 292) = 4.30$, $p = .039$, $\omega^2 = .010$. Post hoc tests revealed ghosting recipients ($M = 5.28$, $SD = 0.17$) to be significantly more committed than ghosting disengagers ($M = 4.34$, $SD = 0.17$). No significant difference emerged between direct disengagers and direct recipients.

The main effect of breakup role on *positive tone/self-blame* became significant when commitment was added as a covariate ($F(1, 291) = 4.03$, $p = .046$, $\omega^2 = .006$), such that disengagers ($M = .366$, $SD = .314$) reported using more of these tactics than recipients ($M = .300$, $SD = .286$) reported their partners to have used. All other main effects and interactions involved in the confirmatory hypotheses were not affected by adding relationship length or commitment as covariates. A table of *F* statistics, *p*-values and effect sizes of each factorial ANOVA with and without covariates can be found in the supplementary materials on the OSF (https://osf.io/r9wnu/).

Exploratory Analyses

The following results emerged in Sample B but not Sample A and are considered exploratory given that they were not hypothesized in advance. These findings are interpreted without controlling for Type I error, meaning findings that attained a *p* value of less than .05 were considered significant and interpreted as such. Direct disengagers reported the motivation to facilitate a *gentle breakup* influenced their decision more heavily than recipients perceived, *Welch's* $F(1, 143.96) = 8.72$, $p = .004$, *est.* $\omega^2 = .050$. In addition, ghosting disengagers reported that feeling guilty about hurting the recipients' feelings influenced their decision to ghost more than recipients perceived, *Welch's* $F(1, 143.74) = 7.95$, $p = .005$, *est.* $\omega^2 = .045$. A main effect of breakup strategy emerged for breakup distress, with relationships dissolved directly eliciting greater distress than breakups dissolved through ghosting, $F(1, 292) = 12.58$, $p < .001$, $\omega^2 = .073$. The main effect of breakup strategy on breakup distress remained significant when relationship length was

Table 8: Descriptive statistics of the BDS, BES, and PBRS of Sample B.

	Direct		Ghosting		Total	
	M	***SD***	***M***	***SD***	***M***	***SD***
BDS						
Disengager	2.03	.75	1.69	.67	1.86	.73
Recipient	2.89	.83	2.62	.75	2.76	.80
Total	2.46	.90	2.15	.85	2.31	.89
BES						
Disengager	−.50	1.74	−1.12	1.83	−.81	1.80
Recipient	2.73	1.81	2.58	1.93	2.66	1.87
Total	1.12	2.40	.73	2.64	.93	2.52
PBRS						
Disengager	3.80	1.11	3.10	1.12	3.45	1.16
Recipient	3.21	1.29	3.27	1.23	3.24	1.26
Total	3.50	1.23	3.19	1.18	3.34	1.21

Note: BDS = Breakup Distress Scale, BES = Breakup Emotions Scale, PBRS = Post-breakup Recovery Scale.

Table 7: Mean scores and standard deviations for factors of the Direct MBSC and Ghosting MBSC as a function of breakup role in Sample B.

Role	Direct MBSC Factors			Ghosting MBSC Factors			
	Gentle	Clarity	Disinterest	Avoidance	Disinterest	Guilt	Difficulty
	M (SD)	***M (SD)***	***M (SD)***	***M (SD)***	***M (SD)***	***M (SD)***	***M (SD)***
Disengager	4.47 (1.32)	5.51 (1.12)	3.41 (1.60)	4.59 (1.44)	4.72 (1.60)	3.97 (1.70)	3.68 (1.95)
Recipient	3.79 (1.48)	4.81 (1.41)	3.46 (1.42)	4.76 (1.34)	3.83 (1.42)	3.22 (1.50)	3.16 (1.49)

Note: Gentle = gentle breakup, Clarity = clarity and understanding, Difficulty = anticipated a difficult breakup.

added as a covariate but became non-significant when commitment was added as a covariate. An exploration of post-breakup personal growth revealed a significant main effect of breakup strategy, such that participants in direct breakups reported significantly more personal growth than participants in relationships that ended through ghosting, $F(1, 292) = 5.27$, $p = .022$, $\omega^2 = .014$. However, this main effect became non-significant when relationship length and commitment were added independently as covariates. Though no significant main effect of breakup role was found for post-breakup personal growth, when commitment was added as a covariate the main effect became significant ($F(1, 291) = 4.11$, $p = .044$, $\omega^2 = .010$), such that disengagers ($M = 3.45$, $SD = 1.16$) reported greater growth than recipients ($M = 3.24$, $SD = 1.26$). In addition, the interaction between strategy and role was significant, $F(1, 292) = 7.67$, $p = .006$, $\omega^2 = .022$. Direct disengagers reported significantly more post-breakup personal growth than direct recipients, but the difference between ghosting disengagers and ghosting recipients was not significant.

Results Summary

Eight findings from Sample A were replicated in Sample B (see **Table 5**). Main effects of breakup strategy for *avoidance/withdrawal* and *distant/mediated communication* emerged such that higher proportions of use were reported in ghosting breakups compared to direct breakups. In addition, *open confrontation* and *positive-tone/self-blame* tactics were used more often in direct breakups than ghosting breakups. Main effects of breakup role replicated for breakup distress and negative affect, with recipients reporting significantly higher levels than disengagers. Disengagers reported being more motivated to achieve *clarity and understanding* during a direct breakup than recipients perceived, and disengagers were motivated to ghost because they felt *disinterested* more so than recipients who had been ghosted perceived.

Six findings that demonstrated statistical significance below $p < .05$ in Sample A did not replicate. The main effect of breakup role for the breakup tactics of *de-escalation* and *avoidance/withdrawal*, the main effect of breakup strategy for *manipulation*, and the interaction between strategy and role for *cost escalation* and the subsequent pairwise comparisons did not reemerge as significant in Sample B. In addition, the difference in the perceived influence of the ghosting MBSC factor *anticipated a difficult breakup* between disengagers and recipients did not replicate.

Discussion

With much existing research focused on how technologically-mediated communication is increasingly used to initiate and maintain relationships, the current study investigated how technology influences processes and outcomes of relationship dissolution by comparing breakups that occurred directly and through ghosting. Differences in tactics leading up to the culmination of relationship termination varied mostly between breakup strategies, while measures of breakup distress and negative affect were highly associated with breakup role. As technology continues to advance, empirical research must strive to identify any new benefits or consequences of the incorporation of such technological developments into our behavior in romantic relationships.

Across both samples, exploratory analyses indicated breakups that ended directly, compared to those that ended through ghosting, lasted longer and were characterized by greater commitment. Consistent with prior research, direct breakups that involved genuine expressions of emotion and honest, clear explanations of dissolution were more often found to occur in relationships where intimacy was high, whereas strategies involving more avoidance were more often used when intimacy was low (Banks et al., 1987; Baxter, 1982; Cody, 1982). This may suggest that within relationships where partners have developed a close and intimate connection with each other, direct conversations may be the preferred breakup strategy due to established feelings of compassion and respect. However, it could also reflect Davis's (1973) suggestion that the longer partners are involved the more difficult it is to untie partners from each other, making fading away a less efficient breakup strategy. Despite significant differences in relationship length and commitment, relationships that ended through ghosting were still, on average, approximately six months in length, and average commitment ratings in relationships that ended through ghosting were above the midpoint on the scale (above 4 on a scale of 1 to 7). These findings suggest that ghosting is a breakup strategy that is not selectively employed to dissolve only short-term or casual relationships (e.g., one-night stands, friends-with-benefits, non-exclusive dating relationships).

Relationships that ended through ghosting were shown to have significantly higher reported use of *avoidance/withdrawal* and *distant/mediated communication* tactics, and significantly less reported use of *open confrontation* and *positive tone/self-blame* breakup tactics. In line with the defining features of each strategy, the lack of explanation involved with ghosting coincides with increased use of *avoidance/withdrawal*, while the existence of an explicit expression of dissolution characteristic of a direct breakup aligns with greater use of *open confrontation* tactics. Similarly, the *positive tone/self-blame* tactics necessitate some sort of communication between partners, making use of such tactics highly unlikely in ghosting breakups. While these findings follow logically from the defining characteristics of each strategy, the ability for the nature of each strategy to be documented quantitatively represents a novel contribution to this area of research.

Direct disengagers reported that the desire for a clear and straightforward breakup motivated their decision to end their relationships directly, however, direct recipients did not perceive this motivation as a significant influence in disengagers' decision to break up directly. This discrepancy suggests that while direct disengagers may intend to give the recipients clarity and understanding during the breakup conversation, recipients may still be confused or in want of further information or discussion. Alternately, recipients who might retain bitter or otherwise negative feelings post-dissolution may be less likely to attribute caring-oriented motivations to disengagers' decision

to breakup with them. Ghosting disengagers reported that simply feeling disinterested in their relationships motivated their decision to ghost significantly more so than ghosting recipients perceived. Differences in the perceptions of disengagers and recipients in terms of how or why dissolution occurred are noteworthy as these inconsistencies may provide insight or explanatory power as to why differences in post-breakup outcome measures exist.

The perception of ghosting in popular culture articles has been largely negative, and ghosting recipients are usually highlighted as targets who experience undue suffering. When considered independently, ghosting may seem like an uncompassionate breakup strategy that exacerbates an already distressing situation. However, when paralleled with a comparable experience (i.e., a traditional breakup), post-breakup outcomes that may seem unique to ghosting breakups become less apparent. In both our samples direct breakups were found to be more distressing than breakups that ended through ghosting (though both instances were exploratory and did not account for inflated Type I error). Furthermore, when commitment was added as a covariate across both samples, the amount of reported breakup distress between direct and ghosting breakups became indistinguishable. When relationship length was controlled for in Sample A, the effect of breakup strategy disappeared, however, in Sample B, the effect remained statistically significant. This suggests that commitment, and perhaps to a lesser extent relationship length, have a greater influence over experiences of post-breakup distress than the breakup strategy that was used to facilitate relationship dissolution. Further research will be needed to identify and quantify potential differences in post-breakup outcomes between breakup strategies if such differences exist.

Consistent with prior research (Davis et al., 2003; Field et al., 2009; Hill et al., 1976; Morris, Reiber, & Roman, 2015; Perilloux & Buss, 2008; Sprecher, 1994; Sprecher & Fehr, 1998), across both samples recipients experienced significantly greater amounts of distress and negative affect than disengagers regardless of strategy used during the breakup. The replicability of this finding in addition to the large effect sizes in both samples indicates that breakup role is a key factor in predicting distress-oriented experiences post-dissolution. Relatedly, similar to Sprecher's (1994) finding that positive emotions of love and relief were experienced after relationship dissolution, disengagers from both ghosting and direct breakups reported experiencing more positive affect than negative affect on average. Future research should assess a fuller spectrum of emotions when investigating emotional experiences after romantic relationship dissolution. To summarize, more salient than how the breakup occurred, being the rejected partner who did not have control over the breakup contributed to much greater experiences of distress.

Theoretical Implications

While the current research is relatively atheoretical in nature, there is a multitude of opportunities for more theoretically based investigations of ghosting in future studies. For example, past research has shown that more "compassionate" dissolution strategies are used when intimacy and commitment are high (Banks et al., 1987; Cody, 1982). In addition, exploratory analyses in the current study demonstrated that direct breakups were characterized by greater commitment and longer relationship duration than those that ended through ghosting. This suggests that investment theory may be an appropriate theoretical framework for predicting whether compassionate (direct) or uncompassionate (ghosting) strategies will be used to dissolve a breakup. Furthermore, determining what type of individuals are more likely to ghost others or be ghosted could be investigated using the attachment theory framework or the Dark Triad of personality. In an unpublished exploratory study, we found preliminary evidence for associations between anxious attachment and the frequency of being ghosted by partners (Koessler et al., 2019). Furthermore, Machiavellianism and psychopathy were found to be positively correlated with ghosting others, while Machiavellianism and narcissism were positively associated with being ghosted by others (Koessler et al., 2019). While the current study focused more on situational aspects of the process of relationship dissolution rather than individual differences, future research may benefit from combining situational and dispositional factors into the same statistical model to assess which characteristics are most influential in determining post-breakup outcomes. Gender differences in experiences of relationship dissolution were not examined in the current study, however, we encourage those interested in exploring the potential influence of gender to do so using our dataset that is available on the OSF (https://osf.io/mz53p/).

Limitations and Future Directions

Ghosting is a distinct breakup strategy that has evolved with the extensive infusion of technologically-mediated communication into romantic relationships. Consequently, the assumption that relationship dissolution involves an explicit written or verbal communicative aspect has been challenged, suggesting that how breakup strategies have been conceptualized in past literature should be reevaluated going forward. While the current research considered a direct strategy to involve breakups in which an explicit indication of dissolution occurred, this conceptualization can take a variety of different forms. For example, a direct conversation can involve a dialogue between partners where detailed explanations can be given, questions can be asked, and feelings debriefed. However, a direct conversation could also involve sending a single text message that says, "it's over." Though a clear and direct indication is given in both scenarios, the nature of these breakups is obviously very different and may result in different post-breakup consequences. Similarly, there are a variety of ways in which ghosting can be carried out. For example, ghosting can occur gradually over time or can be immediate such that all connections between partners are removed or prevented in one fell swoop.

While our study is the first to compare experiences of relationship dissolution between breakups terminated through ghosting compared to those terminated through a direct conversation, we only provided participants with a general definition of what constitutes a ghosting breakup and a direct breakup. The vagueness of our operationalizations might have allowed for diverse breakup experiences within each breakup strategy to be reported and subsequently included in our analyses. For example, if a participant experienced a breakup in which an explicit end-of-relationship declaration was given, followed by the severing of technologically-mediated connections between themselves and their partner, it is unclear how the participant would characterize their breakup. On the one hand, they could consider their breakup direct because a conversation was had, but they could also consider it a ghosting breakup because ghosting behaviors ensued. A potential reason for labeling a breakup like this example as a ghosting breakup, despite a declaration of dissolution being given, is that there is no colloquial or catchy term (to the current researchers' knowledge) that distinguishes between a "pure" ghosting breakup where absolutely no verbal indication of dissolution is provided, and one in which ghosting behaviors occur either before or after some sort of breakup conversation is had. In the current study, no extensive efforts were made to ensure that breakups categorized as ghosting did not involve an explicit declaration of dissolution prior to the implementation of ghosting behaviors. Therefore, the type of breakup the participants reportedly experienced may have been largely determined based upon how they personally conceptualized ghosting and direct breakups, or which characteristics of their breakup were most salient. A dichotomous conception of these breakup strategies represents a very preliminary approach to understanding differences in the process of relationship dissolution and ignores the diversity and nuances of breakup experiences within these larger categories. Further investigation of different types of breakups that fall under the umbrella of ghosting and direct breakup strategies is needed.

In agreement with Sprecher (1994), it is the opinion of the current researchers that there is great value in collecting information about the experiences of both partners within a relationship dyad. This research has shown that differences exist in post-breakup distress and positive and negative affect, along with perceptions of motivations for breakup strategy choice depending on whether an individual was the disengager or recipient. However, a limitation of the current research is that the recipients and disengagers were not from the same relationship. As such, agreement between relationship partners on the variables of interest in the current study could not be assessed. A longitudinal study that recruits couples and collects data leading up to relationship dissolution would offer unique insights into the cause of dissolution, the process leading up to (breakup tactics) the culmination of relationship termination (direct or indirect), and post-breakup outcomes, and provide the opportunity to compare self-reports and partner perceptions of these variables between both members of the dyad. Additionally, collecting detailed information about the dissolution process as it is unfolding using weekly or monthly diaries or surveys would allow participants to describe their breakup as it is occurring instead of having to rely on their memories to recount breakups that happened weeks, months or years ago. While recruitment and attrition represent unavoidable obstacles that would have to be strategically handled, dyadic data from partners who dissolved their relationships during the course of a study would allow researchers to add another level of inquiry and understanding to the area of relationship dissolution, specifically that of within-couple variation and between-couple variation, as opposed to one-sided recollections of relationship breakups or recollections of breakups that happened further in the past.

Concluding Thoughts

The present research represents the first empirical investigation of the differences in experiences of relationship dissolution between relationships that end directly and those that end through ghosting. Our results showed distinct differences between ghosting and direct strategies, which suggests that developments in technology have influenced traditional processes of relationship dissolution. Further research is needed to gain a more comprehensive understanding of the costs and benefits associated with how technology is used in the context of dissolving romantic relationships.

Data Accessibility Statement

Recruitment materials, ethics documents, measures, participant data, preregistered hypotheses and analysis syntax can be found on this paper's project page on the Open Science Framework (OSF; https://osf.io/t6q4s/).

Note

[1] A factor named "disinterest" appears in both motivation scales for ghosting and direct breakups. While these factors represent the same underlying construct of losing interest in the relationship or relationship partner, it is important to note that they contain different items.

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Competing Interests

The authors have no competing interests to declare.

Author Contributions

- Contributed to conception and design: RBK, TK, LC
- Contributed to acquisition of data: RBK
- Contributed to analysis and interpretation of data: RBK, TK, LC
- Drafted the article: RBK
- Revised the article: RBK, TK, LC
- Approved the submitted version for publication: RBK, TK, LC

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