Missing the Past Eating Disorder:
Exploring the Dark Side of Nostalgia during Eating Disorder Recovery

by

Isabella Rose Ludvig Bossom

A thesis submitted to the Faculty of Graduate and Postdoctoral Affairs in partial fulfillment of
the requirements for the degree of

Master of Arts
in
Psychology

Carleton University
Ottawa, Ontario

© 2022, Isabella Rose Ludvig Bossom
Abstract

Behaviour change is motivated by a sense of self-discontinuity with the pre-addicted self because self-discontinuity elicits nostalgic reverie for life before the addiction. To date, these associations have only been tested among people attempting to initiate behaviour change. Herein, I examined whether eating disorder recovery is hindered by feeling that the recovery process has fundamentally altered one’s sense of self (i.e., self-discontinuity), thus eliciting nostalgic reverie for the eating disorder. In Study 1, among people in eating disorder recovery, self-discontinuity was negatively associated with subjective recovery and mediated by nostalgia for the perceived benefits of the eating disorder. In Study 2, I manipulated self-discontinuity and then measured nostalgic reverie for the perceived benefits of the eating disorder and subjective recovery. Contrary to predictions, participants manipulated to feel self-continuous (versus self-discontinuous) felt earlier in their subjective recovery via nostalgia for the perceived benefits of the past eating disorder self.

Keywords: eating disorders, recovery, nostalgia, nostalgic reverie, self-discontinuity, self-continuity
Acknowledgements

First and foremost, I would like to express my sincere gratitude to Dr. Nassim Tabri and Dr. Michael Wohl for their support and mentorship throughout my degree. I am privileged to have benefited from their kindness, guidance, feedback, and wisdom. Their mentorship has been instrumental in helping me to become a stronger researcher, writer, and presenter. I will leave Carleton University knowing that I learned a lot from some of the most knowledgeable professors in psychology. I would also like to thank Dr. John Zelenski for his kindness and help with my first ever publication. As well, thank you to the Department of Psychology for allowing me to pursue my studies at Carleton University. Thank you to the members of the Betterment Labs, the Mental Health and Addictions Lab, and the Psychology Graduate Students’ Association for welcoming me into their groups and supporting my research goals and social goals. I am grateful that I have more friendships now than when I started my degree.

Lastly, thank you to my friends and family for their belief in me and endless support. Thank you Jenn McNeil, Ramona Charbel, and Kimia Fardfini for being friends in the program who were always there to provide words of encouragement and good vibes. Thank you Colleen Putzig, my longtime friend, for listening to me cite psychology literature in every conversation (sometimes I can’t help it!) and being there for me through thick or thin. Thank you to my partner, Marshall Ritchie, for helping to celebrate my successes, and provide encouragement during the more challenging times. Thank you to my sister, Juliana Bossom, for your enthusiasm for my research. Thank you Mom for teaching me to be curious about the way the world works, encouraging me to try new things, and for always being available to talk to me. Thank you Dad for teaching me the importance of taking breaks, challenging myself (i.e., with statistics and math – yikes!), and being a good listener.
Table of Contents

Abstract .......................................................................................................................................... ii
Acknowledgements ...................................................................................................................... iii
List of Tables ............................................................................................................................... vi
List of Figures ............................................................................................................................. vii
List of Appendices ...................................................................................................................... viii

Missing the Past Eating Disorder: Exploring the Dark Side of Nostalgia during Eating Disorder Recovery

- Eating Disorder Recovery and Relapse .................................................................................. 2
- Self-Discontinuity and Nostalgia ............................................................................................ 4
- Self-Discontinuity and Nostalgia in Eating Disorder Recovery .............................................. 7

Research Overview .................................................................................................................... 9

Study 1 .......................................................................................................................................... 11
Method ...................................................................................................................................... 11
  - Participants and Procedure ................................................................................................. 11
  - Measures ............................................................................................................................ 15
Results ....................................................................................................................................... 17
  - Preliminary Analyses ........................................................................................................ 17
  - Descriptive Analyses ........................................................................................................ 17
  - Exploratory Factor Analysis ............................................................................................ 18
  - Mediation Analysis ............................................................................................................ 19
Discussion ................................................................................................................................. 20

Study 2 .......................................................................................................................................... 21
Method ...................................................................................................................................... 21
  - Participants and Procedure ................................................................................................. 21
  - Self-Discontinuity Manipulation ........................................................................................ 25
  - Measured Variables ............................................................................................................ 26
Results ....................................................................................................................................... 27
  - Preliminary Analyses ........................................................................................................ 27
  - Descriptive Analyses ........................................................................................................ 27
  - Mediation Analysis ............................................................................................................ 28
  - Exploratory Analyses ........................................................................................................ 30
Discussion ................................................................................................................................. 31
General Discussion ....................................................................................................................... 33
Implications ............................................................................................................................... 36
Limitations ................................................................................................................................ 37
Conclusion ................................................................................................................................ 38
References ..................................................................................................................................... 40
List of Tables

Table 1. Means, Standard Deviations, and Correlation Coefficients between Variables (Study 1) .................................................................18
Table 2. Exploratory Factor Analysis of Nostalgia Items (Study 1) .................................................................19
Table 3. Means, Standard Deviations, and Correlation Coefficients between Variables (Study 2) .................................................................28
Table 4. Exploratory Factor Analysis of Subjective Recovery Item (Additional Analyses)........98
Table 5. Means, Standard Deviations, and Correlation Coefficients between Variables (Additional Analyses).................................................................99
List of Figures

Figure 1. The Inclusion and Exclusion of Participants in the Data Analyses (Study 1) ..............................................................................................................................................14

Figure 2. Mediation Model with Self-discontinuity as the Independent Variable, Nostalgia as the Mediator Variable, and Subjective Recovery as the Dependent Variable (Study 1) ..........................................................................................................................20

Figure 3. The Inclusion and Exclusion of Participants in the Data Analyses (Study 2) ..............................................................................................................................................24

Figure 4. Mediation Model with the Self-discontinuity/Self-continuity Condition as the Independent Variable, Nostalgia as the Mediator Variable, and Subjective Recovery as the Dependent Variable (Study 2) ..........................................................................................................................30

Figure 5. Scatterplots of the Relation between Self-discontinuity and Nostalgia on Subjective Recovery (Assumption Testing, Study 1) ..............................................................................................................................................74

Figure 6. Normal Probability Plots of the Studentized Residuals (Assumption Testing, Study 1) ..............................................................................................................................................75

Figure 7. Scatterplot of the Relation between Nostalgia and Subjective Recovery (Assumption Testing, Study 2) ..............................................................................................................................................96

Figure 8. Normal Probability Plots of the Studentized Residuals (Assumption Testing, Study 2) ..............................................................................................................................................97

Figure 9. Mediation Model with Self-discontinuity/Self-continuity Condition as the Independent Variable, Nostalgia as the Mediator Variable, and Subjective Recovery (Relapse Focused) Items as the Dependent Variable (Additional Analyses) .........................100
List of Appendices

Appendix A: Notice for Recruitment (Study 1)…………………………………………………52
Appendix B: Informed Consent (Study 1)……………………………………………………….53
Appendix C: Eligibility Items (Study 1) …………………………………………………………56
Appendix D: Ineligibility Debriefing (Study 1) …………………………………………………57
Appendix E: Questionnaire Package (Study 1) ………………………………………………58
Appendix F: Debriefing Form (Study 1) ……………………………………………………………70
Appendix G: Linear Regression Assumption Checks (Study 1) ………………………………..73
Appendix H: Notice for Recruitment (Study 2)………………………………………………..76
Appendix I: Informed Consent (Study 2)……………………………………………………….77
Appendix J: Eligibility Items (Study 2)…………………………………………………………..80
Appendix K: Ineligibility Debriefing (Study 2)………………………………………………..81
Appendix L: Questionnaire Package (Study 2) …………………………………………………82
Appendix M: Debriefing Form (Study 2) ……………………………………………………………92
Appendix N: Consent to Use of Data (Study 2)………………………………………………….94
Appendix O: Linear Regression Assumption Checks (Study 2) ……………………………….95
Appendix P: Additional Analyses……………………………………………………………………98
Missing the Past Eating Disorder: 
Exploring the Dark Side of Nostalgia during Eating Disorder Recovery

Eating disorders are among the most debilitating and lethal of the psychiatric disorders (Arcelus et al., 2011; Fairweather-Schmidt & Wade, 2015; Smink et al., 2013; Wade et al., 2012). In fact, eating disorders have the highest mortality of all mental illnesses at 10-15% (Arcelus et al., 2011). Even among people who seek treatment for their eating disorder, 31% of people with anorexia nervosa will relapse post-treatment (see Berends et al., 2018) and approximately 50% will return to treatment within three to six months (Friedman et al., 2016). Although eating disorders are chronic relapsing conditions (Franko et al., 2018), some people do recover overtime after a decade or more (Eddy et al., 2017). In short, recovery from an eating disorder is hard. Accordingly, it is important to understand the factors that may interfere with the recovery process.

An unexplored factor that may interfere with the recovery process is the extent to which people feel that the recovery process has fundamentally altered their sense of self (i.e., perceived self-discontinuity). Theory and research on eating disorders has shown that the self-concept (i.e., one’s sense of self) plays an important role in the maintenance and recovery of eating disorders (Granek, 2007; Higbed & Fox, 2010; Kenny et al., 2020; Tierney & Fox, 2010; Williams et al., 2016). However, to date, research in the domain of eating disorders has yet to examine whether there is a relation between recovery and the belief that the recovery process has created a sense of self-discontinuity.

In the current research, I examined the heretofore untested hypothesis that people in recovery from an eating disorder may come to believe that the recovery process has fundamentally altered their sense of self—a self that was defined, in part, by the eating disorder.
Such self-discontinuity should negatively effect the recovery process because self-discontinuity has been reliably found to elicit nostalgic reverie (i.e., sentimental longing) for the past self (Sedikides & Wildschut, 2018). In the context of an eating disorder, I contend that feeling self-discontinuity should elicit nostalgic reverie for the perceived benefits of engagement in disordered eating behaviours (e.g., compliments received about one’s body shape and weight). Because nostalgia creates a strong sense of connection with one’s past and an associated desire to return or reclaim that past self (Kim & Wohl, 2015; Salmon et al., 2018; Wohl et al., 2018), people in recovery from an eating disorder who feel discontinuity-induced nostalgia should feel closer to the life they lived with an eating disorder. Consequently, they may believe that they are not advanced in their recovery process. Herein, I tested a mediation model across two studies among people in recovery from an eating disorder where I predicted that greater self-discontinuity would be indirectly associated with feeling earlier in the recovery process via greater nostalgia for the past eating disorder self.

**Eating Disorder Recovery and Relapse**

Eating disorders refer to a group of mental and physical health disorders that involve maladaptive eating and exercising behaviours that impair daily functioning and negatively influences health, affect, and cognitions (American Psychiatric Association, 2013). Two of the most studied eating disorders described in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) are anorexia nervosa and bulimia nervosa. Anorexia nervosa is typically characterized by weight loss, distorted body image, food restriction, and an intense fear of gaining weight among other symptoms (American Psychiatric Association, 2013). Similarly, bulimia nervosa is also characterized by distorted body image, but also includes recurrent binge eating episodes, feeling a lack of control over the amount of food to eat, and
recurrent compensatory purging behaviours, such as vomiting or excessive exercise (American Psychiatric Association, 2013). Like other psychiatric disorders, the prevalence of people with a diagnosed eating disorder is between 1-2% of the general population (Arcelus et al., 2011). However, eating disorders are particularly lethal because they have the highest mortality of all mental disorders at 10-15% (Arcelus et al., 2011) due to physical illness or suicide (Birmingham et al., 2005; Katzman, 2005).

Eating disorders are chronic relapsing conditions that can last for many years (Franko et al., 2018). For example, in a longitudinal observational study that tracked people with eating disorders for over 20 years, results showed that most people who entered the study with a diagnosis of bulimia nervosa recovered within 10 years, and most people who entered the study with a diagnosis of anorexia nervosa recovered within 22 years follow-up (Eddy et al., 2017). As such, although recovery from an eating disorder is possible, the recovery process can take years, even a decade or more.

Critically, most people with an eating disorder do not seek formal treatment. Indeed, it is estimated that only 19-32% of people with eating disorders will receive treatment (Hart et al., 2011), which can be attributed to treatment barriers, such as high financial costs, social stigma, and limited availability and access to treatment facilities (Thompson & Park, 2016). In addition, approximately half of the people who do enter treatment do not recover and approximately 31% of people with anorexia nervosa will relapse post-treatment (e.g., Berends et al., 2018; Fairburn et al., 2009; Friedman et al., 2016). Therefore, it is important to understand which people in recovery are at risk for relapse and the factors that influence the recovery process.
Self-Discontinuity and Nostalgia

A large body of literature has shown that one’s present and past selves are interconnected (i.e., that people have a sense of self-continuity; Dunkel, 2005; Lampinen et al., 2004; Sadeh & Karniol, 2012; van Tilburg et al., 2019). Perceiving that one is self-continuous has been shown to facilitate well-being by way of, among other things, increasing meaning in life (van Tilburg et al., 2019) and improving coping abilities (Sadeh & Karniol, 2012; Sokol & Serper, 2019). The reason why self-continuous beliefs are beneficial is because they help people process positive and negative events coherently and predictably over time (van Tilburg et al., 2019).

Mental health disorders often undermine a sense of self-continuity, which can lead to a sense of self-discontinuity (Sedikides et al., 2015a). A perceived self-discontinuity is the belief that one’s present self is fundamentally different from one’s past self (Lampinen et al., 2004; Sani, 2008). Unhealthy behaviours, such as addictive behaviours, may generate a sense of self-discontinuity (Kim & Wohl, 2015; Salmon et al., 2018). The reason is that these unhealthy behaviours typically alter people’s thoughts, feelings, and behaviours over time from who they were before the problem began (Bergh & Kühlhorn, 1994; Lesieur & Custer, 1984). Indeed, people living with an addictive behaviour have described the person they were during their addiction as their “real selves” despite significant life changes, demonstrating that self-discontinuity can be an especially strong belief (McIntosh & McKeeganey, 2000; Nuske & Hing, 2013).

Although self-discontinuity is typically perceived as something that should be avoided (Chandler & Proulx, 2008; Milligan, 2003), recent research has shown that self-discontinuity may yield an array of benefits. This is because, perceptions of self-discontinuity elicit nostalgic reverie for a past time in one’s life (Kim & Wohl, 2015; Salmon et al., 2018; Sedikides et al.,
Nostalgia is a bittersweet emotion that reflects a wistful or sentimental yearning to return to a time in the past (for a review, see Sedikides & Wildschut, 2019). It is bittersweet in that memories of the past are positive but alongside those positive memories is a recognition that one is no longer living with the longed-for aspects of the past that elicited those positive memories. However, the sweet aspects of the emotion appear to outweigh the bitter aspects. For example, nostalgia has been shown to help people find meaning in their lives by increasing self-continuity and well-being through self-reflection (Sedikides & Wildschut, 2018; Wildschut et al., 2006; Vess et al., 2012). For example, Sedikides et al. (2015b) experimentally induced nostalgia by instructing participants to reflect about a nostalgic event in their lives, write down keywords that described it, and then described the event in detail. Participants in the control condition reflected, wrote keywords, and described an ordinary autobiographical event. Participants in the nostalgia condition reported feeling more connected with their past and their past self (i.e., they felt more self-continuous) than participants in the control condition. This finding has been extensively replicated using other methods and contexts of nostalgia induction (i.e., listening to highly nostalgic versus non-nostalgic songs; van Tilburg et al., 2019 Experiment 3-4; watching a nostalgic sports video montage; Chang et al., 2019), in correlational studies without a nostalgia manipulation (i.e., nostalgia for a person’s home and host country after repatriation; Zou et al., 2018), and cross-culturally (see Hong et al., 2022). Therefore, nostalgia makes people feel connected to their past.

Nostalgia is not merely an intrapsychic mind trick to temporarily improve psychological well-being; it can motivate behaviour aimed at bringing the past back to the present. Nostalgia functions in this way because it motivates people to act in ways to become more socially connected again and to reclaim their pasts. Within the context of unhealthy behaviour, recent
work has found that nostalgic reflection on life before the unhealthy behaviour began increases readiness to change the unhealthy behaviour (Salmon et al., 2018; Kim & Wohl, 2015; Wohl et al., 2018). For example, Kim and Wohl (2015) led disordered gamblers and problem drinkers to believe that they were either self-continuous (by writing about how they felt like the same person now compared to before their addictive behaviour) or self-discontinuous (by writing about how they felt like a different person now compared to before their addictive behaviour). Compared to participants in the self-continuous condition, those in the self-discontinuity condition reported more nostalgia for the life prior to the addiction and greater readiness to take the necessary steps to quit or cut back on engagement in the addictive behaviour. Wohl et al. (2018) replicated and extended these findings using a longitudinal design. Participants in the self-discontinuity condition were more likely to try and change their gambling behaviour one month later compared to participants in the self-continuous condition. In sum, it would appear self-discontinuity-induced nostalgia for the pre-addicted self has the ability to motivate positive behaviour change.

Although there is growing evidence that self-discontinuity-induced nostalgia has behaviour change utility, there may be contexts wherein self-discontinuity-induced nostalgia undermines attempts to change one's unhealthy behaviour. One such context involves people who are in recovery from an unhealthy behaviour. Self-discontinuity-induced nostalgia for the self when they were engaging in unhealthy behaviour may have a deleterious effect on the recovery process. There is some indirect evidence for this idea. Specifically, research has shown that people in recovery from an eating disorder or addictive behaviour reported that they had to stop identifying with the unhealthy behaviour to advance the recovery process (Buckingham et al., 2013; Keski-Rahkonen & Tozzi, 2005; Reith & Dobbie, 2012). Put differently, some people
who live with an eating disorder come to think that the disorder is a fundamental aspect of their sense of self. As such, these individuals may perceive a sense of self-discontinuity with their past eating disorder self. The net effect may be nostalgic reverie for aspects of the life lived whilst engaging in disordered eating behaviours. Consequently, the more connected individuals feel to their past eating disorder self, the more they may feel that they are not advanced in their recovery process.

What could people in recovery from an eating disorder long for? The answer resides in the perceived benefits that people reaped from engaging in the unhealthy behaviour. Indeed, Wise and Koob (2014) argued that unhealthy behaviour continues, in part, because of the benefits a person gets from that behaviour. For example, disordered gamblers report that they gamble for, among other things, the excitement and rush of gambling as well as the social interaction with other gamblers (Marchica et al., 2020; Stewart & Zack, 2008). Similarly, people who misuse substances often report that they continue to use their substance of choice because of the “positive feelings” it elicits (Cho et al., 2019; May et al., 2020). Therefore, it is possible that people in recovery who perceive a self-discontinuity will feel nostalgic for their past unhealthy behaviour, specifically for the perceived benefits of that behaviour. If people are feeling nostalgic for the perceived benefits of their unhealthy behaviour, then they may become motivated to return to engaging in the unhealthy behaviour to reap the perceived benefits.

Self-Discontinuity and Nostalgia in Eating Disorder Recovery

In the context of eating disorders, it is well established that the self-concept is related to recovery outcomes (Granek, 2007; Higbed & Fox, 2010; Kenny et al., 2020; Tierney & Fox, 2010; Williams et al., 2016). For instance, in a qualitative study, Williams et al. (2016) identified five theoretical categories that people with anorexia nervosa experience regarding their self-
concept: 1) anorexia nervosa taking over the self, 2) anorexia nervosa protecting the self, 3) sharing the self with anorexia nervosa, 4) being no one without anorexia nervosa, and 5) discovering the real self (accepting the fear). In the anorexia nervosa taking over the self category, people experience their sense of self being replaced or taken over by the disorder. In the anorexia nervosa protecting the self category, the eating disorder serves a positive function by protecting what is left of the real self. In the sharing the self with anorexia nervosa category, people believe that the self is divided into two parts (the real self and the disordered self), which causes identity confusion. In the being no one without anorexia nervosa category, people believe that they will no longer understand who they are without their eating disorder, which is a barrier to beginning the recovery process. Lastly, in discovering the real me and accepting the fear category, people separate their eating disorder self from their true self and rebuild their self-concept. This last category about recovery is described as being filled with intense fear and challenge because people think that without the eating disorder they would no longer know who they are. Of note, several qualitative studies confirmed the categories in the theoretical framework proposed by Williams et al. (2016; Granek, 2007; Higbed & Fox, 2010; Kenny et al., 2020; Tierney & Fox, 2010). A recent thematic analysis of eating disorder recovery blog posts conducted by Kenny et al. (2020) found support for changes to the self during recovery. The overarching theme identified in their analyses was that life in eating disorder recovery is fundamentally different from the life led during the eating disorder. Importantly, in one sub-theme the bloggers expressed that their identities were lost or changed by having an eating disorder and that a major benefit of recovery was being able to reclaim their identities and feel like their authentic selves.
To date, no research has explored whether self-discontinuity influences eating disorder recovery. Despite the benefits of self-discontinuity for eliciting behaviour change among people currently engaging in an unhealthy behaviour, self-discontinuity in the context of recovery may have negative implications. Among people who believe that the recovery process has created a self-discontinuity (i.e., they perceive a discrepancy with their unhealthy self, pre-recovery), their feelings of nostalgia for their life pre-recovery may interfere with how they feel about their recovery process since the function of nostalgia is to motivate action to bring the past back into the present. People in recovery for their eating disorder may yearn or long for their life when they had an eating disorder because their disorder provided them with perceived benefits. For instance, according to Gregertsen et al. (2017), common perceived benefits of having an eating disorder include, gaining a sense of control, feeling a sense of mastery and skillfulness, receiving compliments on one’s appearance and dieting performance, increased attention, prompting kindness from others, and feeling special. Although people with eating disorders know that their disordered eating is harmful and unhealthy (Borzekowski et al., 2010; Whitehead 2010), they may continue to engage in disordered eating behaviours to keep reaping these benefits (see Nordbø et al., 2012; Serpell et al., 1999).

Critically, feeling nostalgic for the perceived benefits of the past eating disorder should pull people back to the eating disorder to “reclaim” the benefits they lost when they began their recovery. That is, people in recovery who feel very nostalgic for the perceived benefits of their eating disorder may subjectively feel that they are earlier, or less advanced, in the recovery process.

**Research Overview**
The purpose of the current research was to test the hypothesis (using a mediation model) that self-discontinuity between the current self in recovery and the past self when one had an eating disorder would increase nostalgia for the perceived benefits of one’s past eating disorder. The net effect would be decreased subjective recovery (i.e., feeling less advanced in the recovery process). Of course, eating disorder recovery can be defined and measured in many ways (Bardone-Cone et al., 2018). Herein, I used subjective recovery as the outcome of my proposed mediation model because the objective criteria of eating disorder recovery (e.g., length of time in recovery) does not consider a person’s subjective experience. For example, a person could be in recovery for a long period of time despite feeling insecure about maintaining their recovery and on the brink of a relapse. As such, subjective recovery is an advantageous conceptualization of recovery because it may be even more predictive of relapse than objective recovery measures (Björk & Ahlström, 2008; LaMarre & Rice, 2021). Support for a subjective definition of recovery was found in a qualitative study by Björk and Ahlström (2008) that asked people in eating disorder recovery to describe how they experience recovery. The aspects of recovery that were important to each patient (e.g., improved self-esteem, relaxation in relation to food, a healthy relationship to their body) varied significantly and with differing levels of importance. As such, it is beneficial to use a subjective definition of recovery in eating disorder research because it validates the complex and unique recovery experiences of the patients who are experts on their own personal relapse triggers and strategies to maintain and progress their recovery. In the present research, I measured recovery subjectively by asking participants how early relative to late they feel they are in their recovery process.

In Study 1, I tested the mediation hypothesis using a cross-sectional research design with a sample of people in recovery from eating disorders. I assessed the associations between the
predictor (i.e., self-discontinuity), outcome (i.e., subjective recovery), and intervening variable (i.e., nostalgia). In Study 2, I replicated and extended Study 1 by testing my hypothesis using an experimental research design. I did so by manipulating perceived self-discontinuity. Specifically, participants completed an adapted version of the self-discontinuity writing task created by Kim and Wohl (2015) where half of the participants were randomly assigned to write about how they are a different person in recovery compared to who they were during their eating disorder (i.e., self-discontinuity condition) and the other half wrote about how they are the same person in recovery compared to who they were during their eating disorder (i.e., self-continuity condition). All participants then completed the same measures of nostalgia and subjective recovery from Study 1.

**Study 1**

**Method**

*Participants and Procedure*

Participants were recruited from Amazon.com’s Mechanical Turk (MTurk) system. MTurk provides monetary compensation to their “workers” to complete small tasks. The online survey took approximately 15 minutes to complete and participants were paid US $0.90. The compensation rate was based on the compensation rate for similar psychological studies on MTurk that take between 10 and 15 minutes (Buhrmester et al., 2011).

MTurk workers responded to a recruitment notice (see Appendix A) that described the nature of the study. Interested MTurk workers completed an informed consent form (see Appendix B) after which they answered a few questions to determine their eligibility for the current research (see Appendix C). Ineligible participants were routed out of the study and told that they were ineligible (see Appendix D). To be eligible for the study, participants had to be
residents of the United States and at least 18 years of age, be diagnosed by a psychiatrist or clinical psychologist with an eating disorder and, since being diagnosed, had been in recovery for at least three months. The three-month eligibility was chosen because I wanted to ensure that participants were included who had enough time to realistically consider themselves to be in early, middle, or late recovery. Finally, participants were also required to have access to their health care or treatment provider for their eating disorder in case the questions asked in the study caused any distress.

Eligible participants completed a series of questionnaires that measured all variables of interest among other variables that were not examined in the current research (see Appendix E for the complete questionnaire package). Specifically, participants were assessed on their recovery information, demographics, appearance overvaluation (i.e., the amount of importance people place on their appearance for self-worth and self-definition), self-discontinuity, nostalgia, optimism, motivation for dieting, rumination, perfectionism, and past self-similarity. Participants were redirected to a debriefing page (Appendix F) and they received a survey completion code to get compensated for their participation.

A total of 1,138 participants accessed the study (see Figure 1). Of the 1,138 participants, 236 participants were ineligible. Furthermore, 290 participants were excluded because they withdrew their data, 174 participants were excluded for providing low quality data, 128 participants were excluded for providing data that was copied from the internet or that was consistent with bot traffic, 108 participants were excluded for having significant missing data (i.e., more than 50% of responses missing), and five participants were excluded because they reported that their data were not accurate or honest. The final sample consisted of 197
participants (99 male, 97 female, 1 non-binary). Participants’ ages ranged from 19 to 70 years ($M = 34.92$, $SD = 10.06$).

This research was reviewed and cleared by the Carleton University Psychology Research Ethics Board – B.
Figure 1

*The Inclusion and Exclusion of Participants in the Data Analyses*

Initial data export
\( N = 1,138 \)

\[\Rightarrow\]

Failed the eligibility
\( n = 236 \)

Remaining
\( n = 902 \)

\[\Rightarrow\]

Withdrew from the study
\( n = 290 \)

Remaining
\( n = 612 \)

\[\Rightarrow\]

Provided low data quality
\( n = 174 \)

Remaining
\( n = 438 \)

\[\Rightarrow\]

Data was consistent with bot traffic in the open ended responses
\( n = 128 \)

Remaining
\( n = 310 \)

\[\Rightarrow\]

Significant missing data (>50% of responses)
\( n = 108 \)

Remaining
\( n = 202 \)

\[\Rightarrow\]

Failed accuracy or honesty questions
\( n = 5 \)

Remaining
\( n = 197 \)

*Note: The final sample size \( n = 197 \).*
Measures

Participants completed a questionnaire battery (see Appendix E) of which the following were examined in the current research:

Self-Discontinuity. Self-discontinuity was measured using three items that I adapted from Iyer and Jetten’s (2011) Identity Continuity questionnaire. Items were “My path to recovery from an eating disorder changed who I am,” “The person I was before I started my path to recovery from my eating disorder is different from the person I am now,” and “When I think about who I am now, it is different from who I was before I started my path to recovery from my eating disorder.” Originally a fourth item that was reverse-coded was included in the measure, “There is no difference between who I am now and who I was before I started my path to recover from an eating disorder.” This fourth item was excluded due to having a significantly negative influence on the measure reliability, which decreased \(a = .75\) down to \(a = .42\). Each item was anchored at 1 (strongly disagree) and 7 (strongly agree). Participants’ scores were calculated by obtaining the mean of the three items with higher scores indicating greater self-discontinuity (\(a = .75\)).

Nostalgia. Nostalgic reverie for the positive reinforcement received when a person had an eating disorder was measured using an eight-item inventory scale I developed for the current research. The scale comprised three subscales: Nostalgia Strength, Nostalgia Frequency, and Nostalgia Control. Nostalgia strength measures how nostalgic participants were for specific common positive reinforcements of eating disorders. There were four items (e.g., “I feel nostalgic for the compliments I received from other people during my eating disorder”) and participants responded to each item with a response scale with endpoints 1 (strongly disagree) and 7 (strongly agree). Participants’ scores were calculated by obtaining the mean of the four
items with higher scores indicating greater nostalgia strength ($a = .86$). Nostalgia frequency refers to how often people engage in nostalgizing. There was only one item, “How often do you feel nostalgic about your eating disorder?” and participants responded using a scale with endpoints 1 (never) to 7 (all the time). Higher scores on the nostalgia frequency item indicated greater nostalgia frequency. Nostalgia control refers to the ability one has to control their nostalgizing. Three items were used to measure nostalgia control (e.g., “When I begin to romanticize my eating disorder, I allow myself a limited amount of time to feel nostalgic”) and participants responded to each item using a scale with endpoints 1 (never) to 7 (all the time). The term romanticize was used because it is a term that is used by people who have eating disorders (Reichmann, 2019), and in this context it means to think about the past eating disorder as being more attractive or interesting than it really was. Participant’s scores were calculated by obtaining the mean of the three items with higher scores indicating greater nostalgia control ($a = .88$).

After completing the eight nostalgia subscale items, participants were asked about the content of their nostalgic reverie, “In the space below, please list what you feel most nostalgic about when you think about your eating disorder” as well as coping strategies they use to reduce their nostalgia and thoughts about their eating disorder, “In the space below, please list one or two of the coping strategies you use when you feel most nostalgic and you think about your eating disorder.” The open-ended questions were included for exploratory purposes only and were not assessed.

**Subjective Recovery.** Subjective recovery was assessed with a single item, “What stage of recovery do you feel you are in?” Participants responded using a scale with anchors at 1 (early), 4 (middle), and 7 (late). Higher scores on the subjective recovery item indicated later subjective recovery.
Results

Preliminary Analyses

Statistical analyses were performed with the Statistical Package for the Social Sciences (SPSS), version 27.0 for MAC (IBM Corporation, 2020). An exploratory factor analysis (EFA) with a promax rotation was conducted to examine the psychometric properties of the nostalgia scale. The data were screened for normality, homoscedasticity, and multicollinearity in order to ensure the assumptions of the regression analysis were met (see Appendix G). The presence of outliers was also screened. To examine whether the relationship between self-discontinuity and subjective recovery was mediated by nostalgia, a mediation analysis was conducted to test the statistical significance of the indirect association between self-discontinuity and subjective recovery via nostalgia. I used Model 4 from the PROCESS macro for SPSS to test the statistical significance of the indirect effect using 95% bias-corrected bootstrapped confidence intervals based on 5000 re-samples (Preacher & Hayes, 2004).

Descriptive Analyses

Table 1 includes the means, standard deviations, and correlation coefficients between each of the key variables. Among these results, self-discontinuity was positively associated with nostalgia ($r = .36, p < .001$) and nostalgia was negatively associated with subjective recovery ($r = -.27, p < .001$). The magnitude of the correlations was moderate. The association between self-discontinuity and subjective recovery was non-significant ($r = -.03, p = .67$).
Table 1

Means, Standard Deviations, and Correlation Coefficients between Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-discontinuity</td>
<td>5.47 (.93)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Nostalgia</td>
<td>4.78 (1.41)</td>
<td>.36**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>3. Subjective recovery</td>
<td>4.31 (1.75)</td>
<td>-.03</td>
<td>-.27**</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: *p <.05, **p <.01

**Exploratory Factor Analysis**

The eight items used to assess nostalgia strength, frequency, and control were included in an EFA. Results indicated only one factor was extracted. A visual check of a scree plot confirmed that only one factor was to be extracted. Standardized factor loadings were strong and reported in Table 2. These results indicated that the three nostalgia subscales are not empirically distinct and so they measure the same underlying construct. As such, a single measure of nostalgia was calculated from all the items. However, because the response scales were not identical across the three subscales, I first z-scored all the items prior to computing the average across all items. As such, in the analyses the nostalgia scale refers to this standardized mean of all the items.
Table 2

*Exploratory Factor Analysis of Nostalgia Items*

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel nostalgic for the way I used to look during my eating disorder.</td>
<td>.758</td>
</tr>
<tr>
<td>2. I often feel nostalgic for the way I felt about myself during my eating disorder.</td>
<td>.754</td>
</tr>
<tr>
<td>3. I feel nostalgic for the compliments I received from other people during my eating disorder.</td>
<td>.763</td>
</tr>
<tr>
<td>4. I often feel nostalgic for the attention I received during my eating disorder.</td>
<td>.793</td>
</tr>
<tr>
<td>5. How often do you feel nostalgic about your eating disorder?</td>
<td>.868</td>
</tr>
<tr>
<td>6. When I begin to romanticize my eating disorder, I allow myself a limited amount of time to feel nostalgic.</td>
<td>.755</td>
</tr>
<tr>
<td>7. When I begin to romanticize my eating disorder, I find it difficult to stop feeling nostalgic.</td>
<td>.828</td>
</tr>
<tr>
<td>8. When I begin to romanticize my eating disorder, I have difficulty getting myself to stop feeling nostalgic.</td>
<td>.901</td>
</tr>
</tbody>
</table>

*Mediation Analysis*

Direct and indirect effects from the mediation analysis are reported in Figure 2. As expected, the indirect association between self-discontinuity and subjective recovery via nostalgia was statistically significant, *Indirect effect* = -.20, *SE* = .07, 95% CI [-.35, -.08] (see Figure 2). Self-discontinuity explained about 11% (*R*² = .11) of the variance in nostalgia. The model explained about 9% (*R*² = .09) of the variance in subjective recovery, which is a small effect.
that they have changed. That is, they believe that there is a discontinuity between who they were when they had an eating disorder and who they became when in recovery from their eating disorder. As hypothesized, greater self-discontinuity was indirectly associated with earlier subjective recovery via greater nostalgia for the eating disordered self. Study 1 provides initial evidence for the negative role played by self-discontinuity and nostalgia in the context of recovery.

A limitation of Study 1 was the use of a cross-sectional research design. As such, causal relations among the variables in the mediation model is uncertain. Consequently, in Study 2, I
experimentally manipulated self-discontinuity using an approach that has been well tested among people engaged in unhealthy behaviours (see Kim & Wohl, 2015; Salmon et al., 2018). Additionally, in Study 1, a single item was used to assess subjective recovery. Single item measures are notoriously unreliable compared to multi-item measures (Nunnally & Bernstein, 1994; Spector, 1992) wherein reliability and error can be across items for a total score (Churchill, 1979; Spector, 1992). In Study 2, items were added to the measure of subjective recovery to address this limitation. Lastly, to minimize the number of participants who provide low data quality, I implemented several strategies to improve data quality in Study 2 (see Hauser et al., 2019). First, to gain access to the survey following informed consent, potential participants completed a ReCAPTCHA. This is done to minimize the possibility of bots entering the survey. Second, at the end of the survey, participants were asked to report on the accuracy (i.e., “Did you provide good, high quality responses?”) and honesty (i.e., “Did you provide honest responses to all items?”) of their responses. Lastly, upon completing data collection, the open text responses were screened for appropriate and reasonable responses.

Study 2

Method

Participants and Procedure

An *a priori* Monte Carlo power analysis for indirect effects (Schoemann et al., 2017) using 10,000 replications and 5,000 Monte Carlo draws per replication was conducted based on the correlations among the measured variables in Study 1. The results indicated that a minimum of 125 participants would be needed to detect a moderate unstandardized effect (Indirect effect = -.20) at an alpha of .05 with 80% power and 95% Monte Carlo bootstrapped confidence intervals
A total of 250 participants were recruited from the MTurk system akin to Study 1 to have adequate power in case there were any participant exclusions.

To ensure higher data quality in Study 2, I increased the HIT approval rating (i.e., the ratio of completed tasks approved for payment) from 95% in Study 1 to 97% as recommended by Hauser et al. (2019). Additionally, only CloudResearch approved participants on MTurk were able to participate in this research as recommended by Moeck et al. (2022). The online survey took participants approximately 10 minutes to complete and participants were paid US$0.90.

Based on recommendations for conducting eating disorder research on MTurk from Burnette et al. (2021), I excluded participants who took too quickly (i.e., <5 minutes) or too slowly (i.e., >30 minutes) to complete the survey. I also excluded participants who provided inconsistent age data in the age dropdown at the beginning of the survey and in the text box at the end of the survey. Eligibility was the same as Study 1.

Recruitment for Study 2 was akin to Study 1 (see Appendix H). Participants completed an informed consent form (see Appendix I) and were presented with eligibility criteria (see Appendix J). The ineligible participants were redirected to an ineligibility script (see Appendix K) and were not permitted to complete the survey. The study began by randomly assigning participants to either a self-discontinuity or self-continuity condition (adapted from Kim & Wohl, 2015; see Appendix L).

After the experimental manipulation, nostalgia, subjective recovery, nuanced subjective recovery, satisfaction with life in recovery, spontaneous self-distancing, and demographics were measured. Then, participants were redirected to the debriefing form (see Appendix M) and asked for consent to use their data (see Appendix N).
Participants were included/excluded from the data analyses akin to in Study 1 with the addition of excluding participants who did not follow their assigned self-discontinuity/self-continuity condition (see Figure 3). The \( n = 10 \) participants who were excluded for not following their assigned self-discontinuity/self-continuity condition were all assigned to the self-continuity condition. The final sample consisted of 189 participants (146 female, 40 male, 1 non-binary, 1 transgender man, 1 prefer not to specify). Participants’ ages ranged from 18 to 65 years (\( M = 35.04, SD = 10.51 \)). Participants with a variety of diagnosed eating disorders were represented in the sample (anorexia nervosa \( n = 72 \), binge eating disorder \( n = 51 \), multiple diagnoses \( n = 30 \), bulimia nervosa \( n = 22 \), specified feeding or eating disorder \( n = 9 \), and orthorexia nervosa \( n = 1 \)). The study conditions were relatively balanced (self-discontinuity condition \( n = 88 \), self-continuity condition \( n = 101 \)).

This research has been reviewed and cleared by the Carleton University Psychology Research Ethics Board - B.
Figure 3

The Inclusion and Exclusion of Participants in the Data Analyses

Note: The final sample size $n = 189$. 
Self-Discontinuity Manipulation

To manipulate self-discontinuity (adapted from Kim & Wohl, 2015) participants were randomly assigning participants to either a self-discontinuity condition or a self-continuity condition. In both conditions, participants read a short fictional research summary ostensibly extracted from a fictional psychology journal. In the self-discontinuity condition, participants read that the recovery process fundamentally changes a person from who they were when they were eating in a disordered manner. Specifically, they read:

“In a ground-breaking series of studies published in the New England Journal of Health, researchers found that recovery from an eating disorder can result in significant changes to a person’s sense of self. Specifically, the person in recovery from an eating disorder was fundamentally a different person compared to the person they were when they had an eating disorder. The researchers concluded that the recovery from an eating disorder causes profound changes to the self. We would like to see how this is true for you.”

They were then asked to reflect and then briefly write a few sentences about how they have changed as a result of their recovery process.

In contrast, participants in the self-continuity condition read that the recovery process does not fundamentally change a person from who they were when they were eating in a disordered manner. Specifically, they read:

“In a ground-breaking series of studies published in the New England Journal of Health, researchers found that recovery from an eating disorder had no impact on a person’s sense of self. Specifically, the person in recovery from an eating disorder was fundamentally the same person today as they were when they had an eating disorder. The
researchers concluded that the recovery from an eating disorder causes no changes to the self. We would like to see how this is true for you.”

Akin to those in the self-discontinuity condition, participants were then asked to reflect on and then briefly write a few sentences about how the research findings are true for them.

**Measured Variables**

**Nostalgia.** I assessed the extent to which participants experienced nostalgia using the same four items used in Study 1, with one change\(^1\). All items asked participants to respond to items to report the extent to which they are experiencing nostalgia “right now”. This wording was changed to better anchor responses to how the participants felt in the moment (following the manipulation).

**Subjective Recovery Scale.** In addition to the single item change ladder used in Study 1, participants completed six items that assessed how recovered the felt. All items began with the stem “When thinking about my recovery, I…”. The first three items assessed willingness to continue on the recovery path. The items were: “…am willing to continue on my recovery path”, “…want to continue on my recovery path”, and “…am motivated to continue on my recovery path”. The next three items assessed worry about relapsing/not continuing on the recovery path. The items were, “…am likely to relapse”, “…am worried about a relapse”, and “…am concerned about whether I will relapse”. All six items were presented in a randomized order and were anchored at 1 (*strongly disagree*) and 7 (*strongly agree*). A mean score was calculated for three recovery-focused items and the three relapse-focused items separately. Higher scores on the

---

\(^1\) I did not assess the frequency with which participants experienced nostalgia or the extent to which participants attempted to control their nostalgizing because it is not an aspect of nostalgia that the current manipulation could change.
former indicated feeling more willing to continue on the recovery path, ($a = .88$), and higher scores on the latter indicated feeling more likely to relapse ($a = .89$).

For the purpose of transparency, I also assessed several other constructs (i.e., nuanced subjective recovery, satisfaction with life in recovery, and spontaneous self-distancing) for exploratory purposes. These measures were not analyzed for the current research. The full questionnaire package that includes these measures is presented in Appendix L.

**Results**

**Preliminary Analyses**

First, I conducted assumption checks to ensure the assumptions of the regression analysis were met (see Appendix O). I also screened for the presence of outliers. Then, I conducted an EFA with a promax rotation to determine if the seven subjective recovery items loaded onto one factor\(^2\) (see Appendix P). Thereafter, I computed the main effects of self-discontinuity on nostalgia and subjective recovery, the means, the standard deviations, and the correlations between the main variables.

**Descriptive Analyses**

**Nostalgia.** Results of a one-way analysis of variance (ANOVA) revealed that there was a statistically significant main effect of the self-discontinuity manipulation on nostalgia, $F(1, 188) = 7.56, p = .01, np^2 = .04, 95\% CI [.00, .11]$. Unexpectedly, participants in the self-discontinuity condition ($n = 88$) reported lower levels of nostalgia ($M = 3.13, SD = 1.80$), $95\% CI [2.78, 3.49]$.

\(^2\) For transparency, six items were created to assess subjective recovery whereby the first three items directly assessed willingness to continue on the recovery path and the other three assessed worry about relapse. The factor analysis showed that each set of three items were two different factors (see Appendix P). In the present research, the mediation analysis was conducted with the three items about willingness to continue on the recovery path. An additional mediation analysis with the worry about relapse items was conducted and was reported in Appendix P.
compared to participants in the self-continuity condition \((n = 101), (M = 3.83, SD = 1.65), 95\% CI [3.48, 4.18]$. 

**Subjective Recovery.** Contrary to predictions, a one-way ANOVA revealed that the main effect of the self-discontinuity manipulation on subjective recovery was not statistically significant, \(F(1, 188) = 2.41, p = .12, \text{np}^2 = .01, 95\% CI [.00, .06]. Participants in the self-discontinuity condition reported similar levels of subjective recovery \((M = 6.32, SD = 0.78), 95\% CI [6.17, 6.47]$ compared to participants in the self-continuity condition \((M = 6.14, SD = 0.85), 95\% CI [6.00, 6.32]$. 

Table 3 includes the means, standard deviations, and correlation coefficients between each of the key variables.

Self-discontinuity was negatively associated with nostalgia \((r = -.20, p < .001)$ and nostalgia was negatively associated with subjective recovery \((r = -.29, p < .001)$). The magnitude of the correlations was moderate. The association between self-discontinuity and subjective recovery was non-significant, \(r = .11, p = .12\).

**Table 3**

 Means, Standard Deviations, and Correlation Coefficients between Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-discontinuity/self-continuity Condition</td>
<td>0.53 (0.50)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Nostalgia</td>
<td>3.46 (1.76)</td>
<td>-.20**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>3. Subjective Recovery</td>
<td>6.23 (0.82)</td>
<td>.11</td>
<td>-.29**</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note: *\(p < .05, \**p < .01; self-discontinuity/self-continuity condition coded 0 = self-continuity, 1 = self-discontinuity*

**Mediation Analysis**
To assess the hypothesized mediation model, I tested the statistical significance of the indirect effect using 95% bias-corrected bootstrapped confidence intervals based on 5000 re-samples with Preacher and Hayes’ (2004) PROCESS Macro, Model 4. The self-discontinuity manipulation served as the independent variable (coded as 0 = self-continuity condition, 1 = self-discontinuity), nostalgia as the mediator variable, and subjective recovery as the outcome variable. The direct and indirect effects from the mediation analysis are reported in Figure 4.

Results revealed that the indirect association between self-discontinuity and subjective recovery via nostalgia was statistically significant, \( \text{Indirect effect} = .09, SE = .04, 95\% \, \text{CI} [.02, .19] \) (see Figure 4). The self-discontinuity/self-continuity manipulation explained about 4% \( R^2 = .04 \) of the variance in nostalgia. The model explained about 9% \( R^2 = .09 \) of the variance in subjective recovery, which is a small effect.

A power sensitivity analysis using a Monte Carlo simulation for indirect effects (Schoemann et al., 2017) with 10,000 replications and 5,000 Monte Carlo draws per replication was conducted based on the correlations between the main variables in Study 2 to determine whether there was sufficient power to detect a statistically significant result. The results indicated that a sample size of 189 with an alpha of .05 would have 77% power, therefore there was adequate power to detect the effect found in Study 2.

**Figure 4**

*Mediation Model with the Self-discontinuity/Self-continuity Condition as the Independent Variable, Nostalgia as the Mediator Variable, and Subjective Recovery as the Dependent Variable*
Exploratory Analyses

An exploratory analysis of the open-ended responses to the manipulation was conducted. First, I read and then re-read all responses. Based on my reading, I was able to code the open-ended responses to the self-discontinuity manipulation as framing self-discontinuity with the person they were whilst engaging in their eating disorder as being beneficial or detrimental (coded as 0 = negative view and 1 = positive view). I followed a similar procedure for the open-ended responses in the self-continuity condition.

An independent samples t-test (i.e., a within condition comparison between those who framed continuity/discontinuity as beneficial versus detrimental) on nostalgic reverie for the eating disorder could not be conducted for participants in the self-discontinuity condition because all of the participants viewed self-discontinuity as something that was beneficial ($n = 101$). However, an independent samples t-test could be conducted among those in the self-continuity condition who ($n = 67$) viewed self-continuity as detrimental ($n = 18$). Results
revealed a main effect of self-continuity perception on nostalgia for the eating disorder, \( t(83) = 1.65, p = .05, 95\% \text{ CI} [-0.15, 1.60] \). Participants who viewed their self-continuity as beneficial reported less nostalgia (\( M = 3.71, SD = 1.67 \)) compared to those who viewed self-continuity as detrimental (\( M = 4.43, SD = 1.60 \)). In other words, contrary to what might be expected, when participants felt connected to their eating disordered self, and viewed that self as detrimental to (as opposed to beneficial for) their health and well-being, they reported greater longing for their eating disorder.

A similar independent samples t-test was also conducted using the beneficial versus detrimental coding variable in the self-continuity condition as the independent variable and subjective recovery as the dependent variable. A main effect was observed, \( t(83) = -2.37, p = .01, 95\% \text{ CI} [-0.88, -0.08] \). Participants who viewed their self-continuity as beneficial reported feeling more advanced in their subjective recovery (\( M = 6.29, SD = 0.70 \)) compared to those who viewed self-continuity as detrimental (\( M = 5.81, SD = 0.95 \)). Therefore, when participants felt connected to their disordered eating self, and viewed the eating disorder self to be beneficial to their well-being (relative to detrimental), they reported feeling more advanced in their recovery process.

**Discussion**

Results of Study 2 did not support the hypothesized mediation model. Specifically, participants in recovery from an eating disorder who were manipulated to feel self-discontinuous (i.e., disconnected) with the person they were during their eating disorder felt less nostalgia for the benefits they reaped from their eating disorder than those manipulated to feel self-continuous with their eating disorder self. This is contrary to what is typically observed in the nostalgia literature. Theory and research on nostalgia (Sedikides et al., 2015; Kim & Wohl, 2015; Salmon
et al., 2018; Wohl et al., 2018) suggest it is a product of perceived self-discontinuity. People feel nostalgic when the present is perceived to be disconnected from a positive past. In the current study, I found that nostalgia was experienced when people felt connected to their eating disordered self. One possible explanation for this is that participants perceived their eating disordered self in a positive light but because they are in recovery they are not able to engage in disordered eating behaviour. The net result is nostalgia for that eating disorder self. In line with expectations, subjective recovery was negatively associated with nostalgia. Specifically, the more nostalgic participants were for the benefits of their eating disorder the less advanced they believed themselves to be in the recovery process. Moreover, results of a mediation analysis showed that the people who were manipulated to feel self-continuous (versus self-discontinuous) reported reduced subjective recovery by way of heightened nostalgic reverie for the benefits of their eating disorder.

To explore the results of Study 2, I coded the open-ended responses participants provided immediately following the manipulation. Whilst all participants in the self-discontinuity condition reported that they viewed their disconnection to be beneficial to their health and well-being, there was not consensus among participants in the self-continuity condition. Specifically, whilst some participants reported that connection to their eating disordered self was detrimental to their health and well-being (as I had hoped) some people reported that a connection to their eating disordered self was beneficial to their health and well-being. Perhaps unsurprisingly, those who felt connected to the eating disordered self, and felt the connection was beneficial, felt less nostalgic reverie (compared to those who viewed their self-continuity with their eating disordered self as detrimental) but they did feel more advanced in their recovery process. This implies that for some people in recovery—specifically those who perceive a connection to the
eating disordered self to be beneficial—a sense of self-continuity may aid the recovery process. However, more research is needed to fully understand the results of Study 2 and why they are not aligned with the results of Study 1.

**General Discussion**

The purpose of the present research was to explore why eating disorder recovery is so difficult to initiate and maintain (Eddy et al., 2017), and why a high percentage of people relapse (Berends et al., 2018; Friedman et al., 2016; Franko et al., 2018). Currently, little is known about the factors that influence the perceived recovery process. Across two studies, I tested the idea that self-discontinuity between the self (in recovery) and the past self when one had an eating disorder undermines the recovery process by inducing nostalgia for the perceived benefits of one’s past eating disorder. Although prior work has found that self-discontinuity-induced nostalgia motivates readiness to stop engaging in unhealthy behaviours (Kim & Wohl., 2015; Salmon et al., 2018; Wohl et al., 2018), I hypothesized that among those in recovery from engaging in an unhealthy behaviour (an eating disorder), self-discontinuity with the person they were when they were engaging in the unhealthy behaviour should induce nostalgia for that behaviour. The net effect being a feeling that one is earlier in their recovery (i.e., they perceive they are not as advanced in their recovery from the unhealthy behaviour).

In Study 1, I found support for my hypothesized mediation model in a community sample of people in recovery from an eating disorder. Specifically, people who reported feeling that the self in recovery was fundamentally different from the person they were when engaging in disordered eating (i.e., self-discontinuity) experienced greater nostalgic reverie for the benefits they reaped from their eating disorder (e.g., compliments about their body shape and weight). The net result was feeling they were earlier (i.e., less advanced) in their recovery from their
eating disorder. These results suggest that self-discontinuity-induced nostalgia is an important, heretofore unexamined factor that influences the recovery process. Put differently, feeling nostalgic for the (perceived) benefits of engaging in an unhealthy behaviour may be one reason many people find recovery is so challenging. However, Study 1 had a cross-sectional design and so it was not possible to assess the potential causal relations between self-discontinuity, nostalgia, and subjective recovery.

To replicate and extend the results of Study 1, in Study 2 I manipulated perceived self-discontinuity. Doing so allowed me to better assess the causal direction of the observed effects and allowed me to examine whether people can be nudged along the path to recovery by experimentally highlighting continuity between the current self (in recovery) and the person they were before entering recovery (i.e., the person in the throes of their unhealthy behaviour). Accordingly, participants in Study 2 read about ostensibly real research that shows people in recovery are fundamentally different (self-discontinuity condition) or the same (self-continuity condition) as the person they were during their eating disorder. Contrary to predictions, I found that being in the self-continuity condition, relative to the self-discontinuity condition, was indirectly related to feeling earlier in the recovery process via greater nostalgia for the benefits of the past self when one had an eating disorder.

One possible explanation for the contradictory findings is the methodological difference between Studies 1 and 2. In Study 1, the agent of change in the self-discontinuity scale was recovery (e.g., “My path to recovery from an eating disorder changed who I am.”). Specifically, participants were asked whether the recovery process (not the eating disorder) changed who they were. In contrast, in Study 2, the manipulation positioned the eating disorder (not recovery) as the change agent. For instance, participants in the self-discontinuity condition read the headline
“Research Shows Eating Disorders Can Change Who You Are” and participants in the self-continuity condition read “Research Shows Eating Disorders Do Not Change Who You Are”. In sum, discontinuity was the product of the recovery process in Study 1 but was the product of the eating disorder in Study 2. As such, in Study 1, I framed the recovery process in a negative light. If so, change as a result of the recovery process may be perceived as unwanted thus leading to a positive association between self-discontinuity (as a result of recovery) and nostalgia for the eating disorder. Conversely, in Study 2, I framed the eating disorder in a negative light in the discontinuity condition (“the eating disorder changed you”) but in a positive light in the continuity condition (“the eating disorder did not change you). People in recovery may thus have been drawn back to the eating disorder (i.e., nostalgize about the eating disorder) in the continuity condition because I framed it as a positive past that they no longer have.

Another possibility for the contrasting findings between studies could be individual differences in why people entered recovery. Some people enter recovery of their own free will. That is, they recognize that their behaviour is unhealthy and decide to take the necessary steps to remove that unhealthy behaviour from their repertoire. Other people are forced into the recovery process by others (e.g., an ultimatum is made by others, a caregiver sends the person engaged in an unhealthy behaviour to rehab, or change is enforced by the legal system). People who self-impose change may be more likely to see discontinuity with the eating disordered self in a positive light, and thus not nostalgize for that self. It is possible that the proportion of people who entered the recovery process of their own volition differed between Studies 1 and 2. Unfortunately, I did not assess whether entering recovery was self (compared to other) directed. As such, I cannot examine this explanation for my findings. However, future research should assess this possibility.
**Implications**

Although Study 1 is consistent with the literature that suggests that self-discontinuity leads to nostalgia, Study 2 is novel because it is the first research to demonstrate that self-continuity can elicit nostalgia for the past. Recovery may be a unique context in which self-continuity, rather than self-discontinuity, induces nostalgia for the previous life. For people in recovery, their nostalgia is likely focused on the perceived benefits that they used to reap from the eating disorder that they have lost. People understand that the unhealthy behaviour they are engaging in is causing them harm (Borzekowski et al., 2010; Whitehead 2010), but they continue to engage in this behaviour because of the rewards they are reaping from it (which is why recovery is difficult; see Nordbø et al., 2012; Serpell et al., 1999). Disconnecting with that person you were when you engaged in an unhealthy behaviour is when people begin to feel they are progressing in their recovery process. In the recovery context, people need to break free from their past self to move forward. As such, if people feel connected with who they were when they had an eating disorder, then they will long for the perceived benefits that they have lost due to being in recovery and their longing will undermine their recovery by making them feel earlier in their recovery process.

The current research has implications for the self-discontinuity and nostalgia literature, understanding the recovery process, and potentially for eating disorder recovery treatment. Regardless of whether self-discontinuity or self-continuity elicits nostalgia, across both studies nostalgia for the perceived benefits of the past eating disorder made people feel that they were earlier in their recovery process. For instance, participants reported feeling nostalgic for their past appearance, confidence, ability to cope with negative feelings, ability to control something in their lives, specific foods and quantities of food, among many others.
Nostalgia is not a topic that is typically considered during recovery from an eating disorder, despite treatment providers and people with lived experience, who label it ‘anorexia nostalgia’ claiming it is experienced (Alston & McNulty, 2020; Amatus Recovery Centers, 2020; Reichmann, 2019). If self-continuity leads to nostalgia, which undermines recovery, then treatment providers need to be aware that this can occur. Treatment providers should assess whether people in recovery still feel connected with their past self when they had an eating disorder and whether or not their clients feel nostalgic. In fact, treatment providers may want to establish self-discontinuity among their clients in recovery to help facilitate the recovery process.

Limitations

Some limitations of the current work should be noted. One potential limitation could be the selected sample. In particular, both studies recruited participants using the same eligibility criteria on MTurk. MTurk data quality has significantly decreased since 2018, which has been largely attributed to participants completing surveys multiple times through a Virtual Private Server (VPS; Kennedy et al., 2020). In Study 1, the data quality was potentially of poor quality and a high number (n = 415) of participants were excluded. However, Study 2 had very good data quality, which was likely the result of applying the numerous suggested methods that have found prior success in recent years among psychology researchers and in eating disorder research (Burnette et al., 2021; Hauser et al., 2019; Moeck et al., 2022).

Another limitation is that in the present research, nostalgia for the perceived benefits of the self when one had an eating disorder was only assessed at one time point. As such, it is only possible to conclude that manipulating participants to feel self-continuous in the moment is indirectly associated with feeling earlier in the recovery process via nostalgia. Future research should study people overtime starting with people in the throes of an eating disorder
through to treatment and recovery to examine how natural fluctuations in discontinuity and nostalgia occur. Ideally, research could use experience sampling to assess how discontinuity and nostalgia change overtime and how they influence a person’s perception of their recovery.

As discussed previously, another limitation is that, unintentionally, the agent of change was different between Study 1 and Study 2, which may have influenced how participants interpreted the self-discontinuity scale (in Study 1) and manipulation (in Study 2). Future research should directly assess whether or not the agent of change influences how participants respond on the nostalgia scale.

Lastly, the focus of both studies was on people in recovery from eating disorders. It is important to understand whether the effects of self-(dis)continuity and nostalgia on subjective recovery are specific to eating disorders or whether they generalize to other unhealthy, or addictive, behaviours. Future research should replicate and extend the current findings to other unhealthy and addictive behaviours.

Conclusion

Across two studies, I tested whether self-discontinuity induces nostalgia for the perceived benefits of the past eating disorder, and whether that nostalgia makes people feel earlier in their recovery process. My research consistently demonstrated that nostalgia for the perceived benefits they reaped when they had an eating disorder makes people feel earlier in their subjective recovery. In Study 1, self-discontinuity was associated with nostalgia and with feeling earlier in the recovery process. In Study 2, participants who were manipulated to feel self-continuous felt that they were earlier in their subjective recovery via nostalgia. The evidence from both studies suggests that self-(dis)continuity and nostalgic reverie for the benefits that they reaped from engaging in disordered eating influences how advanced people feel in their recovery from their
eating disorder. Future research is needed to assess under what conditions and for whom is nostalgia experienced. This research suggests that nostalgia needs to be examined in greater depth and understood by both treatment providers and people in recovery because nostalgic reverie undermines the recovery process.
References


https://doi.org/10.1080/14775085.2020.1715827


IBM Corp. Released 2020. IBM SPSS Statistics for Macintosh, Version 27.0. Armonk, NY: IBM Corp


Appendix A: Notice for Recruitment

Exploring Paths to Recovery from an Eating Disorder

In this study, we will explore how people think and feel about their path to recovery. Specifically, we will ask you a variety of questions that deal with how your thoughts and behaviors relate to the ups and downs of the recovery process.

You will be compensated of US$0.90 for your participation in this 15 minute survey.

Your participation as well as your responses will be strictly confidential. Only researchers associated with the project will know you participated in the study and no one will know how you responded to the questions asked. Know that information you provide that allows us to re-contact you will be kept separate from your responses. At the end of the study, we will destroy all contact information.

We can anticipate no physical discomfort to you as a result of your participation in this study. You may, however, experience anxiety or distress when thinking about past or current disordered eating behaviors. In the event you feel anxiety or distress, you may withdraw at any time during the study without penalty. Information will then be provided linking you to appropriate health services in your local area.

Eligibility Requirements:
1. Must be a resident of the United States
2. Must be at least 18 years of age
3. Must have been diagnosed by a clinical psychologist or psychiatrist with anorexia nervosa, bulimia nervosa, binge eating disorder, or other specified eating or feeding disorder
4. Must have access to a health care or treatment provider (i.e., you have the means to seek assistance if you feel it necessary)
5. Since being diagnosed, has been in recovery for at least 3 months

This study takes about 15 minutes, and upon completion you will receive US$0.90 for your participation.

This study has received clearance by the Carleton University Research Ethics Board-B (CUREB-B Clearance #113260).
This research is funded by a Carleton University Research Achievement Award to Dr. Michael Wohl
Appendix B: Informed Consent (Study 1)

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study. This study has received clearance by the Carleton University Research Ethics Board-B (CUREB-B Clearance # 113260). Ethics expiration date: September 30th 2021.

This research is funded by a Carleton University Research Achievement Award to Dr. Michael Wohl

Eligibility: All participants must:
1) Be a resident of the United States,
2) Be at least 18 years of age,
3) Has a clinical psychologist or psychiatrist diagnosed you with anorexia nervosa, bulimia nervosa, binge eating disorder, or other specified eating or feeding disorder?
4) Must have current access to a health care or treatment provider (i.e., you have the means to seek assistance if you feel it necessary), and
5) Since being diagnosed, have been in recovery for at least 3 months
Please note that you will be assessed on your eligibility to participate immediately following this consent form. Only eligible participants will be permitted to participate in the survey and receive US$0.90.

Present study: Exploring Paths to Recovery from an Eating Disorder

Research personnel. The following people are involved in this study and may be contacted at any time if you have questions or concerns: Dr. Michael Wohl (Principal Investigator, michael.wohl@carleton.ca, 613-520-2600 ext. 2908), Dr. Nassim Tabri (co-Investigator, NassimTabri@cunet.carleton.ca) Isabella Bossm (Graduate Researcher, IsabellaBossom@cmail.carleton.ca), Mackenzie Dowson (Undergraduate Researcher, mackenziedowson@cmail.carleton.ca), Melissa Salmon (PhD Researcher melissasalmon@cmail.carleton.ca).

Concerns. Should you have any ethical concerns about this research, please contact the REB Chair, Carleton University Research Ethics Board-B (by phone: 613-520-2600 ext. 4085, or by email: ethics@carleton.ca). For all other questions about the study, please contact the researchers.

Purpose. The purpose of this study is to examine how people think and feel about the recovery process from an eating disorder.

Task requirements. You will be asked to fill out several questionnaires about your path to recovery and related experiences.

Benefits/compensation. We are offering eligible participants who complete the study US$0.90. You will still receive compensation for your participation should you choose to withdraw.
**Duration and locale.** The survey will be administered online and should take approximately 15 minutes to complete. Be assured that your name will not be associated in any way with the research finding.

**Potential risk/discomfort.** We can anticipate no physical discomfort to you as a result of your participation in this study. You may, however, experience some stress when thinking about past or current eating disorder behavior. If you do experience any distress or discomfort, we recommend that you contact your health care provider. You may also wish to contact one of the eating disorder helplines nearest to your location. A list of helplines can be found at [https://www.bulimia.com/topics/eating-disorder-hotline/](https://www.bulimia.com/topics/eating-disorder-hotline/). A copy of this information will be provided to you in the debriefing sheet following the questionnaires.

**Right to Withdraw:** Your participation in this study is entirely voluntary. At any point during the study, you have the right not to complete certain questions or to withdraw with no penalty whatsoever. To withdraw at any point during the study, simply click the “withdraw” button at the bottom of each page. By clicking “withdraw” you will be automatically re-directed to the debriefing page. This means that you will still receive compensation for your participation should you choose to withdraw. Any data you provide before choosing to withdraw during the study will be manually destroyed before data analysis. If you choose to withdraw, it is essential that you read the debriefing form at the end of the survey. This form will provide information on who to contact should you feel distress from the nature of the survey.

If, after participating, you decide you want your data withdrawn, please email one of the researchers identified on the debriefing form. The researcher will then delete any record of your participation in this study, as well as the email you sent. We anticipate the study will be complete by September 2021. Once the study is complete, all identifying information will be deleted and thus researchers will have no way of identifying your responses. In this situation, the researcher will not be able to delete your data.

**Anonymity/Confidentiality:** The data collected in this experiment are confidential. MTurk worker IDs will only be collected for the purposes of distributing compensation and will not be associated with survey responses. Furthermore, worker IDs will not be shared with anyone outside of the research team and will be removed from the data set. Although you have been recruited to participate in this study through MTurk, all of your responses and data will be recorded on Qualtrics (and none of your responses will be stored on MTurk). All data on the Qualtrics server is encrypted and protected using multiple layers of security (e.g., encrypted websites and password protected storage). For more information about the security of data on Qualtrics, please see the Qualtrics security and privacy policy, which can be found at the following link: [http://www.qualtrics.com/security-statement](http://www.qualtrics.com/security-statement).

During the study, data will be collected and stored on Qualtrics servers hosted in Canada. Data from Qualtrics servers may only be disclosed via a court order or data breach. In view of this, we cannot absolutely guarantee the full confidentiality and anonymity of your data. After the survey is complete, anonymous survey data will remain accessible indefinitely to the research team and be secured on encrypted computers in Drs. Wohl and Tabri’s laboratory. With your consent to participate in this study, you acknowledge this.
**Data Storing and Sharing:** The data will be stored on the computers of the researchers and research assistants involved with this project. As there will be no personal information associated with the data, this dataset will be stored electronically and kept indefinitely. Additionally, we will upload this anonymized dataset to an online data repository called Open Science Framework (http://osf.io/) for research and teaching purposes.

Do you agree to participate in this study?

☐ Yes.

☐ No.
Appendix C: Eligibility Items

1. Are you a resident of the United states?
   a. Yes (continue)
   b. No (not eligible – redirect to ineligibility debriefing)

2. Are you 18 years of age or older
   a. Yes (continue)
   b. No (not eligible – redirect to ineligibility debriefing)

3. Has a clinical psychologist or psychiatrist diagnosed you with anorexia nervosa, bulimia nervosa, binge eating disorder, or other specified eating or feeding disorder?
   a. Yes (continue)
   b. No (not eligible – redirect to ineligibility debriefing)

4. Do you have access to a health care or treatment provider for your eating disorder (i.e., do you have the means to seek assistance if you feel it necessary?)
   a. Yes (continue)
   b. No (not eligible – redirect to ineligibility debriefing)

5. Since being diagnosed, have you been in recovery for at least 3 months?
   a. Yes (continue)
   b. No (not eligible – redirect to ineligibility debriefing)
Appendix D: Ineligibility Debriefing

Thank you for your interest in this study, however at this time you are not eligible to participate.

A list of online services for eating disorders can be accessed at https://www.eatingdisorderhope.com/treatment-centers/online-eating-disorders-educational-programs.

A list of helplines can be found at https://www.bulimia.com/topics/eating-disorder-hotline/.

Information on the different types of eating disorders can be found at https://nedic.ca/eating-disorders-treatment/.

If you have any questions or concerns about this, you can contact Dr. Michael Wohl at michael.wohl@carleton.ca, Dr. Nassim Tabri at NassimTabri@cunet.carleton.ca, Isabella Bossom at IsabellaBossom@cmail.carleton.ca, Mackenzie Dowson at mackenziedowson@cmail.carleton.ca, or Melissa Salmon at melissasalmon@cmail.carleton.ca.
Appendix E: Questionnaire Package

Demographics and Recovery Items

1. What is your age? ___________

2. What is your gender?
   a. Male
   b. Female
   c. Other/ I identify as: _______________

3. What stage of recovery do you feel you are in?
   (1 – early (i.e., new to recovery), 4 – middle, 7 – late (i.e., I have been in recovery for some time)

4. Have you ever relapsed?
   a. Yes. (If yes, go to question i, ii, iii, 6.)
   b. No. (If no, go to question 4, 5, 6)

5. How long have you been in recovery? (Please respond in weeks)
   i. If you are comfortable, please describe your relapse in a few sentences. If you are uncomfortable, leave this item blank.
   ii. In your opinion, what is the main reason you relapsed? (Open Text Box)
   iii. How many times have you relapsed? (1- 5+)

6. In your opinion, what is the main reason that you have not relapsed? (Open Text Box)

7. Has the COVID-19 pandemic in any way affected your recovery? If yes, please specify how.
   a. Yes _______________ (Open Text Box option)
   b. No.
Shortened Appearance Overvaluation (Spangler & Stice, 2001)

Please indicate the extent to which you agree with the following statements:

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td>Extremely</td>
</tr>
</tbody>
</table>

1. People will think less of me if I don’t look my best.
2. The opportunities that are available to me depend upon how I look.
3. How I feel about myself is largely based on my appearance.
4. My moods are influenced by how I look.
Motivations for Dieting (adapted from Dechant, 2014)

The following statements consist of various reasons why some people try to control their body shape/weight. Please indicate the extent to which you agree with the following statements:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Somewhat Disagree</td>
<td>Neither Agree or Disagree</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
</tbody>
</table>

I tried to control my body shape/weight because…

To be thin
1. I thought being thin would change my life.
2. I wanted to be thin.
3. I was scared of becoming fat.
4. I enjoyed thinking about how being thin would enhance my life.

Coping
1. I wanted to feel more self-confident or sure of myself.
2. I wanted to forget my worries
3. It helped when I was feeling nervous or depressed.
4. It cheered me up when I was in a bad mood.

Enhancement
1. I liked the feeling.
2. It was fun.
3. It was exciting.
4. It made me feel good.
Self-Discontinuity Adapted (Iyer & Jetten, 2011)

Using the following scale, please indicate if you agree or disagree with the following statements. Please mark the answer of your choice to each question according to the following scale.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Somewhat Disagree</td>
<td>Neither Agree or Disagree</td>
<td>Somewhat Agree</td>
<td>Agree</td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

1. My path to recovery from an eating disorder changed who I am.

2. There is no difference between who I am now and who I was before I started my path to recover from an eating disorder. (Reverse coded)

3. The person I was before I started my path to recovery from my eating disorder is different from the person I am now.

4. When I think about who I am now, it is different from who I was before I started my path to recovery from my eating disorder.
Adapted Nostalgia Inventory Scale

**Nostalgia** is a sentimental longing for the past. People can feel nostalgic, or reminisce, about various objects including past-selves, places, experiences, and other people.

Using the following scale, please indicate if you disagree or agree with the following statements. Please mark the answer of your choice to each question according to the following scale.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td>Strongly Agree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. I feel nostalgic for the way I used to look during my eating disorder.
2. I often feel nostalgic for the way I felt about myself during my eating disorder.
3. I feel nostalgic for the compliments I received from other people during my eating disorder.
4. I often feel nostalgic for the attention I received during my eating disorder.

Please mark the answer of your choice to each question according to the following scale.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All the time</td>
</tr>
</tbody>
</table>

5. How often do you feel nostalgic about your eating disorder?
6. When I begin to romanticize my eating disorder, I allow myself a limited amount of time to feel nostalgic.
7. When I begin to romanticize my eating disorder, I find it difficult to stop feeling nostalgic.
8. When I begin to romanticize my eating disorder, I have difficulty getting myself to stop feeling nostalgic.

9. In the space below, please list what you feel most nostalgic about when you think about your eating disorder. Please list one or two. [Open Text Box]

10. In the space below, please list one or two of the coping strategies you use when you feel most nostalgic and you think about your eating disorder. [Open Text Box]
Adapted Optimism (Cheung et al., 2013)

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td></td>
<td></td>
<td></td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

How I am handling my eating disorder...

1. ...makes me feel ready to take on new challenges.
2. ...makes me feel optimistic about my future.
3. ...makes me feel like the sky is the limit.
4. ...gives me a feeling of hope about my future.
5. ... makes me feel optimistic about recovery from my eating disorder.
Adapted Rumination Scale (Conway et al., 2000)

Please indicate the extent to which you agree with the following statements:

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very much</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. I can’t stop thinking about the time when I had an eating disorder.
2. I have difficulty getting myself to stop thinking about the time when I had an eating disorder.
3. I tired myself out thinking about the time when I had an eating disorder.
4. I get absorbed in thinking about the time when I had an eating disorder.
5. I exhaust myself by thinking about the time when I had an eating disorder.
Clinical Perfectionism Questionnaire (Fairburn et al., 2003)

This questionnaire concerns perfectionism, which is defined as trying to meet really high standards whether or not you actually succeed in reaching them.

Please respond to each statement in terms of how you have behaved or felt over the past month.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td>All the time</td>
</tr>
</tbody>
</table>

1. Have you pushed yourself really hard to meet your goals?
2. Have you tended to focus on what you have achieved, rather than on what you have not achieved? (R)
3. Have you been told that your standards are too high?
4. Have you felt a failure as a person because you have not succeeded at meeting your goals?
5. Have you been afraid that you might not reach your standards?
6. Have you raised your standards because you thought they were too easy?
7. Have you judged yourself on the basis of your ability to achieve high standards?
8. Have you done just enough to get by? (R)
9. Have you repeatedly checked how well you are doing at meeting your standards (for example, by comparing your performance with that of others)?
10. Do you think that other people would have thought of you as a “perfectionist”?
11. Have you kept trying to meet your standards, even if this has meant that you have missed out on things?
12. Have you avoided any tests of your performance (at meeting your goals) in case you failed?
Past Self-Similarity (Hershfield, 2011)

The following sets of circles show the similarity between your past self (during your eating disorder) and the person you are now that you are in recovery.

Please select the set of circles that best represents how similar you feel to your past self.
Accuracy and Honesty

The following items ask you about the quality of the data you provided us today. You will receive credit for completing this HIT regardless of your responses.

1. Did you provide good, high quality responses? Please respond “yes” or “no”:
   ______________________

2. Did you provide honest responses to all items? Please respond “yes” or “no”:
   ______________________

3. Please estimate how long it took you to complete this survey: ____ minutes

4. For completing this survey, we are offering participants US$0.90. Given the time and effort it took you to complete this task, do you think this is fair? Please let us know why or why not:

   ___________________________________________
Distress & Feedback Measure

1. How distressing was completing this survey for you on average? Please respond using the scale from 1-7.

<p>| | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very much</td>
</tr>
</tbody>
</table>

2. We would now like to provide you with the opportunity to deliver feedback on how this study made you feel. Responding to this item is optional. [Open Text Box]
Positive Mood Prime

Although we have asked you some difficult questions about your eating disorder, we recognize that recovery is an important achievement. In this part of the study, we would like for you take some time to reflect on a positive experience in your recovery journey. Please describe this positive experience and what you are most proud of using the space provided below.

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

[page break]

Anxiety Coping Technique

Lastly, we would like to practice a brief grounding exercise. Before starting this exercise, pay attention to your breathing. Slow, deep, long breaths can help you maintain a sense of calm or help you return to a calmer state. Once you find your breath, please answer the questions below:

What are 5 things you can see around you? It could be a pen, a spot on the ceiling, anything in your surroundings.

______________________________________________________________________________

What are 4 things you can touch around you? It could be your hair, the chair you are sitting on, or the ground under your feet.

______________________________________________________________________________

What are 3 things you can hear? This could be the whirring of a fan or a car on the street.

______________________________________________________________________________

What are 2 things you can smell? Maybe you are in your office and smell pencil.

______________________________________________________________________________

What is 1 thing you can taste? Maybe you can still taste the coffee you had earlier.

______________________________________________________________________________
Appendix F: Debriefing Form

This study has received clearance by the Carleton University Research Ethics Board-B (CUREB-B Clearance (#113260))

Thank you for participating in this study! This post-survey information is provided to inform you of the exact nature of the research you just participated in.

Compensation: We will use your Worker ID to grant your reward for completing this study. Please note that this information will not be tied to your responses in any way.

What are we trying to learn in this research?

In this study, we are exploring people’s path to recovery. Our focus is on how nostalgic reverie (i.e., sentimental longing) for one’s eating disorder may be harmful or helpful in the recovery process.

Why is this important to scientists or the general public?

The results from the current research will advance our understanding of the ups and downs people experience on the path to recovery. Findings may potentially also help health care professionals address psychological factors that may interfere with recovery and help those who have an eating disorder prepare for behavior change.

Is there anything I can do if I found this experiment to be emotionally upsetting?

Yes. It is normal to feel some distress or anxiety when thinking about your eating disorder behavior. These emotions are sometimes necessary in order to research or study relations between somewhat sensitive variables. If you are feeling distressed from answering questions about this experience and would like to talk to someone about it, please contact your health care provider immediately. A list of helplines can also be found at https://www.bulimia.com/topics/eating-disorder-hotline/.

What if I have questions later? If you have any questions or comments about this research, please feel free to contact one of the research personnel involved in this research:

Isabella Bossom: IsabellaBosson@gmail.carleton.ca
Mackenzie Dowson: mackenziedowson@gmail.carleton.ca,
Melissa Salmon: melissasalmon@gmail.carleton.ca.
Dr. Michael Wohl: michael.wohl@carleton.ca
Dr. Nassim Tabri: NassimTabri@unet.carleton.ca

Should you have any ethical concerns about this research, please contact the REB Chair, Carleton University Research Ethics Board-B (by phone: 613-520-2600 ext. 4085, or by email: ethics@carleton.ca). For all other questions about the study, please contact the researchers.
Where can I get more resources on recovery and nostalgia research?

If you are interested in learning more about recovery, relapse and eating disorder behaviors, please see the following articles:


The Diagnostic Statistical Manual of Mental Disorders (DSM-5) includes six main types of eating disorders. The following information was taken from https://nedic.ca/eating-disorders-treatment/.

- **Anorexia Nervosa**: Anorexia nervosa is a serious mental illness characterised by behaviours that interfere with maintaining an adequate weight. Biological, social, genetic, and psychological factors play a role in increasing the risk of its onset.

- **Bulimia Nervosa**: Bulimia nervosa is a serious mental illness characterised by periods of food restriction followed by binge eating, with recurrent compensating behaviours to “purge” the body of the food. Biological, social, genetic, and psychological factors play a role in increasing the risk of its onset.

- **Binge Eating Disorder**: Binge eating disorder is a mental illness that can seriously affect psychological and physical health. It is characterized by recurrent episodes of eating large quantities of food then experiencing shame, distress, or guilt afterwards.

- **Avoidant and Restrictive Food Intake Disorder**: Avoidant/restrictive food intake disorder (ARFID) involves limitations in the amount and/or types of food consumed, but unlike anorexia, ARFID does not involve any distress about body shape or size, or fears of fatness. ARFID is a mental illness which can severely compromise growth, development, and health.

- **Other Specified Eating and Feeding Disorder**: Other Specified Feeding and Eating Disorders refers to atypical presentations of anorexia nervosa, bulimia nervosa, and binge eating disorder, among other eating disorders. These eating disorders are equally serious and as potentially life-threatening as the more typical presentations.

- **Other Eating Disorders**: Including pica, rumination disorder, and unspecified feeding or eating disorder.
If you are interested in additional eating disorder-related resources, The National Eating Disorders Association https://www.nationaleatingdisorders.org has a wealth of current research, information, and services available. Additional resources can be found at https://www.nimh.nih.gov/health/topics/eating-disorders/index.shtml

Thank you for participating in this study! We greatly appreciate your participation!
Appendix G: Linear Regression Assumption Checks

Prior to conducting the linear regression analyses, the necessary assumptions were checked to ensure the analyses were appropriate. The analyses included a continuous dependent variable, as well as a continuous independent variable, supporting the use of linear regression analyses.

**Independence of Observations**

As well, all cases were independently drawn with no known temporal component indicating that the assumption of independence of observations was met.

**Linearity**

Scatterplots of the relation between independent variables and the dependent variable suggested that the relations between the predictor and outcome variables were indeed linear (see Figure 5).

**Outliers**

The data was then examined for highly influential points (i.e., outliers). A total of 4 univariate outliers were identified above or below 2.5SD, however, to avoid removing variance in the data, the cases were retained.

**Normality**

Moreover, an inspection of the normal probability plot of standardized residuals for the self-discontinuity on subjective recovery indicated no major departures from normality (see Figure 6). However, the normality probability plot of nostalgia on subjective recovery appeared non-normal (see Figure 6) and contained a pattern indicating heteroskedasticity.
Heteroskedasticity

The presence of heteroskedasticity was confirmed using Daryanto’s (2020) Heteroskedasticity Test macro version 3. Specifically, the Breusch-Pagan and Koneker tests were statistically significant (\(p = .04\); \(p = .02\)) when nostalgia was used as a predictor of subjective recovery. As such, Huber-White robust standard errors were used in the mediation analysis to address heteroskedasticity in the data.

Multicollinearity

The results indicated that there were no problematic correlations detected as the correlation between self-discontinuity and nostalgia was below .80, \(r = .36\), and the VIF values were all less than 1.15 suggesting the data were not multicollinear (Cohen et al., 2003).

Figure 5

*Scatterplots of the Relation between Self-discontinuity and Nostalgia on Subjective Recovery*
Figure 6

Normal Probability Plots of the Studentized Residuals
Appendix H: Notice for Recruitment

Tell Us about Your Recovery from an Eating Disorder

In this study, we will explore how people think and feel about their path to recovery. Specifically, we will ask you to reflect and write about who you were when you had an eating disorder and who you are now in recovery.

You will be compensated of US$0.90 for your participation in this 10 minute survey.

Your participation as well as your responses will be strictly confidential. Only researchers associated with the project will know you participated in the study and no one will know how you responded to the questions asked. Know that information you provide that allows us to re-contact you will be kept separate from your responses. At the end of the study, we will destroy all contact information.

We can anticipate no physical discomfort to you as a result of your participation in this study. You may, however, experience anxiety or distress when thinking about who you were when you had an eating disorder and who you are now in recovery. In the event you feel anxiety or distress, you may withdraw at any time during the study without penalty. Information will then be provided linking you to appropriate health services in your local area.

Eligibility Requirements:
1. Must be a resident of the United States
2. Must be at least 18 years of age

Please note that you will be assessed on your eligibility to participate before completing the survey. There will be additional eligibility criteria not mentioned in this recruitment notice. Please do not submit your HIT if you are not eligible to complete the survey.

This study takes about 10 minutes, and upon completion you will receive US$0.90 for your participation.

This study has been cleared by Carleton University Research Ethics Board-B (CUREB-B Clearance #116142).

This research is funded by a Carleton University Research Achievement Award to Dr. Michael Wohl.
Appendix I: Informed Consent

The purpose of an informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

This study has been cleared by Carleton University Research Ethics Board-B (CUREB-B Clearance #116142). Ethics expiration date: October 31 2022.

This research is funded by a Carleton University Research Achievement Award to Dr. Michael Wohl

Eligibility: All participants must:

1) Be a resident of the United States, and

2) Be at least 18 years of age

Please note that you will be assessed on your eligibility to participate immediately following this consent form. Only eligible participants will be permitted to participate in the survey and receive US$0.90.

Present study: Tell Us about Your Recovery from an Eating Disorder

Research personnel. The following people are involved in this study and may be contacted at any time if you have questions or concerns: Dr. Michael Wohl (Principle Investigator, michael.wohl@carleton.ca, 613-520-2600 ext. 2908), Dr. Nassim Tabri (co-Investigator, NassimTabri@cunet.carleton.ca) Isabella Bossom (Graduate Researcher, IsabellaBossom@email.carleton.ca), Mackenzie Dowson (Graduate Researcher, mackenziedowson@email.carleton.ca) or Melissa Salmon (PhD Researcher melissasalmon@email.carleton.ca).

Concerns. Should you have any ethical concerns about this research, please contact the REB Chair, Carleton University Research Ethics Board-B (by phone: 613-520-2600 ext. 4085, or by email: ethics@carleton.ca). During COVID, the Research Ethics Staff are working from home without access to their Carleton phone extensions. Accordingly, until staff return to campus, please contact them by email. For all other questions about the study, please contact the researchers.

Purpose. The purpose of this study is to examine how people think and feel about the recovery process from an eating disorder.

Task requirements. We will ask you to reflect and write about who you were when you had an eating disorder and who you are now in recovery.

Benefits/compensation. We are offering eligible participants who complete the study US$0.90. You will still receive compensation for your participation should you choose to withdraw.
Duration and locale. The survey will be administered online and should take approximately 10 minutes to complete. Be assured that your name will not be associated in any way with the research finding.

Potential risk/discomfort. We can anticipate no physical discomfort to you as a result of your participation in this study. You may, however, experience some stress when thinking and writing about who you were when you had an eating disorder and who you are now in recovery. If you do experience any distress or discomfort, we recommend that you contact your health care provider. You may also wish to contact one of the eating disorder helplines nearest to your location. A list of helplines can be found at https://www.bulimia.com/topics/eating-disorder-hotline/. A copy of this information will be provided to you in the debriefing sheet following the questionnaires.

Right to Withdraw: Your participation in this study is entirely voluntary. At any point during the study, you have the right not to complete certain questions or to withdraw with no penalty whatsoever. To withdraw at any point during the study, simply click the “withdraw” button at the bottom of each page. By clicking “withdraw” you will be automatically re-directed to the debriefing page. This means that you will still receive compensation for your participation should you choose to withdraw. Any data you provide before choosing to withdraw during the study will be manually destroyed before data analysis. If you choose to withdraw, it is essential that you read the debriefing form at the end of the survey. After the debriefing form, you will be asked if you consent to your data being used in our research.

Anonymity/Confidentiality: The data collected in this experiment are confidential. MTurk worker IDs will only be collected for the purposes of distributing compensation and will not be associated with survey responses. Furthermore, worker IDs will not be shared with anyone outside of the research team and will be removed from the data set. Although you have been recruited to participate in this study through MTurk, all of your responses and data will be recorded on Qualtrics (and none of your responses will be stored on MTurk). All data on the Qualtrics server is encrypted and protected using multiple layers of security (e.g., encrypted websites and password protected storage). For more information about the security of data on Qualtrics, please see the Qualtrics security and privacy policy, which can be found at the following link: http://www.qualtrics.com/security-statement. During the study, data will be collected and stored on Qualtrics servers hosted in Canada. Data from Qualtrics servers may only be disclosed via a court order or data breach. In view of this, we cannot absolutely guarantee the full confidentiality and anonymity of your data. After the survey is complete, anonymized survey data will remain accessible indefinitely to the research team and be secured on encrypted computers in Drs. Wohl and Tabri’s laboratory. With your consent to participate in this study, you acknowledge this.

Data Storing and Sharing: The data will be stored on the computers of the researchers and research assistants involved with this project. As there will be no personal information associated with the data, this dataset will be stored electronically and kept indefinitely. Additionally, we will upload this anonymized dataset to an online data repository called Open Science Framework (http://osf.io/) for research and teaching purposes.

Do you agree to participate in this study?
☐ Yes.

☐ No.
Appendix J: Eligibility Items

[If the participant responds “yes” to the following four items, then the participant is eligible. If the participant responds “no” to ANY of the FOUR items, then the participant is ineligible.]

1. Are you a resident of the United States?
   a. Yes (continue)
   b. No (not eligible – redirect to ineligibility debriefing)

2. Are you 18 years of age or older
   a. Yes (continue)
   b. No (not eligible – redirect to ineligibility debriefing)

3. Has a clinical psychologist or psychiatrist diagnosed you with anorexia nervosa, bulimia nervosa, binge eating disorder, or other specified eating or feeding disorder?
   a. Yes (continue)
   b. No (not eligible – redirect to ineligibility debriefing)

4. Do you have access to a health care or treatment provider for your eating disorder?
   a. Yes, I have access to a health care or treatment provider
   b. No, I do not have access to a health care or treatment provider

[To be eligible, participants must have selected response options “C” or “D”. If the participants respond with response options “A” or “B”, then they are ineligible.]

5. Since being diagnosed, how long have you been in recovery?
   a. At least a week
   b. At least 1 month
   c. At least 3 months
   d. At least 6 months
Appendix K: Ineligibility Debriefing

Thank you for your interest in this study, however at this time you are not eligible to participate.

A list of online services for eating disorders can be accessed at https://www.eatingdisorderhope.com/treatment-centers/online-eating-disorders-educational-programs.

A list of helplines can be found at https://www.bulimia.com/topics/eating-disorder-hotline/. Information on the different types of eating disorders can be found at https://nedic.ca/eating-disorders-treatment/.

If you have any questions or concerns about this, you can contact Dr. Michael Wohl at michael.wohl@carleton.ca, Dr. Nassim Tabri at NassimTabri@cunet.carleton.ca, Isabella Bossom at IsabellaBossom@cmail.carleton.ca, Mackenzie Dowson at mackenziedowson@cmail.carleton.ca or Melissa Salmon at melissasalmon@cmail.carleton.ca.
Appendix L: Questionnaire Package

Self-Discontinuity Manipulation (adapted from Kim & Wohl, 2015)

Self-Discontinuity Condition:

Research Shows Eating Disorders Can Change Who You Are

In a ground-breaking series of studies published in the New England Journal of Health, researchers found that recovery from an eating disorder can result in significant changes to a person’s sense of self. Specifically, the person in recovery from an eating disorder was fundamentally a different person compared to the person they were when they had an eating disorder. The researchers concluded that the recovery from an eating disorder causes profound changes to the self. We would like to see how this is true for you.

Please take a moment to reflect and write in a few sentences below, how you have changed as a result of your recovery. That is, how you are a different person now in recovery compared to the person you were when you had an eating disorder.

[OPEN TEXT BOX]

Self-Continuity Condition:

Research Shows Eating Disorders Do Not Change Who You Are

In a ground-breaking series of studies published in the New England Journal of Health, researchers found that recovery from an eating disorder had no impact on a person’s sense of self. Specifically, the person in recovery from an eating disorder was fundamentally the same person today as they were when they had an eating disorder. The researchers concluded that the recovery from an eating disorder causes no changes to the self. We would like to see how this is true for you.

Please take a moment to reflect and write in a few sentences below, how you have remained the same. That is, how you are the same person now in recovery compared to the person you were when you had an eating disorder.

[OPEN TEXT BOX]
Nostalgia Inventory Scale

Nostalgia is a sentimental longing for the past. People can feel nostalgic, or reminisce, about various objects including past-selves, places, experiences, and other people.

Using the following scale, please indicate if you disagree or agree with the following statements. Please mark the answer of your choice to each question according to the following scale.

1       2      3      4      5      6      7
Strongly Disagree                  Strongly Agree

1. Right now, I feel nostalgic for the way I used to look during my eating disorder.
2. Right now, I feel nostalgic for the way I felt about myself during my eating disorder.
3. Right now, I feel nostalgic for the compliments I received from other people during my eating disorder.
4. Right now, I feel nostalgic for the attention I received during my eating disorder.
Subjective Recovery Scale

1. Subjective Recovery Ladder (adapted from Biener & Abrams, 1991)

Each rung on this ladder represents where various people are in their eating disorder recovery.

Select the number that indicates where you are now. Please select only one number.

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Late recovery (i.e., I have been in eating disorder recovery for some time)</td>
</tr>
<tr>
<td>9</td>
<td>Middle recovery</td>
</tr>
<tr>
<td>8</td>
<td>Early recovery (i.e., I am new to eating disorder recovery)</td>
</tr>
</tbody>
</table>

2. Please indicate the degree to which you agree with following statements:

1. Strongly Disagree                                                                                      7. Strongly Agree

Please think about your recovery when considering the following items:

“When thinking about my recovery, I…”

1. … am willing to continue on my recovery path.
2. … want to continue on my recovery path.
3. …am motivated to continue on my recovery path.
4. …am likely to relapse.
5. …am worried about a relapse.
6. …am concerned about whether I will relapse.
**Nuanced Subjective Recovery Items**

**Instructions:** Below are five statements that you may agree or disagree with. Using the 1-7 scale below. Please indicate how much you disagree or agree with each statement. Please be open and honest in your responding.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly Disagree</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Strongly Agree</td>
</tr>
</tbody>
</table>

1. I am able to concentrate on things that I am interested in without thinking about food, eating, and calories.
2. I am able to concentrate on things that I am interested in without thinking about my body shape and weight.
3. I am able to concentrate on things that I am interested in without thinking about my eating disorder.
The Satisfaction with Life (In Recovery) Scale (Adapted from Diener, Emmons, Larson, & Griffin, 1985)

**Instructions:** Below are three statements that you may agree or disagree with. Using the 1-7 scale below, please indicate how much you disagree or agree with each statement. Please be open and honest in your responding.

1.____ In most ways my life in eating disorder recovery is close to my ideal.
2. ____ The conditions of my life in eating disorder recovery are excellent.
3. ____ I am satisfied with my life in eating disorder recovery.
Spontaneous Self-Distancing (adapted from Ayduk & Kross, 2010)

No matter how well someone is doing in terms of their recovery, sometimes it can be difficult, so difficult that they feel anxious about the possibility of relapse.

Take a few moments now to think about a specific event that made you feel anxious about your recovery from an eating disorder. Try to remember an event that happened not too long ago and that still makes you anxious when you think about it.

*Press the space bar when the specific event comes to mind.*
[In Qualtrics we will time how long it takes them to hit the space bar]

Page Break

Now that you’ve thought of a specific event that made you feel anxious about your recovery from an eating disorder, spend a few moments right now focusing on the causes and reasons underlying the thoughts and feelings you experienced. Try to understand why you had those feelings. Take a few minutes to do this.

*Press the space bar when the specific event comes to mind.*
[In Qualtrics we will time how long it takes them to hit the space bar]

Page Break

1. When you thought about the event that made you feel anxious about your recovery, how much did you feel like you were seeing it through your own eyes versus watching it from a distance (like watching yourself in a movie)?

   1  2  3  4  5
   6  7 [using a slider]

   Completely through my own eyes
   Completely from a distance

2. When you saw that event again, how far away from it did you feel?

   1  2  3  4  5
   6  7 [using a slider]

   Very close
   Very far

3. When you think about the event now, how close or distant in time does it feel?

   1  2  3  4  5
   6  7 [using a slider]

   Feels like yesterday
   Feels very far away
Demographics and Recovery Assessment Items

1. Which eating disorder(s) have you been diagnosed with? Check all that apply.
   a. Anorexia Nervosa
   b. Bulimia Nervosa
   c. Binge Eating Disorder
   d. Other Specified Feeding or Eating Disorder
   e. Prefer to specify: ____________

2. At what age did you first develop an eating disorder?
   [Drop down of age options from 0-100]

3. Have you ever relapsed?
   a. Yes. (If yes, go to question i)
   b. No. (If no, go to question 5, 6)
      i. How many times have you relapsed? (#)

4. How long have you been in recovery? (Please respond in number of months and years)
   [# of years, # of months]

5. Have you ever received treatment for your eating disorder?
   a. Yes
   b. No

6. What is your age? ___________ (Please respond using digits)

7. What is your gender?
   a. Male
   b. Female
   c. Prefer to specify/ I identify as: ____________
   d. Prefer not to specify

8. Please select the ethnicity or ethnicities that best describe you.
   ___ White (Caucasian)
   ___ Black (e.g., African, Haitian, Jamaican, Somali)
   ___ Arab/West Asian (e.g., Armenian, Egyptian, Iranian, Lebanese)
   ___ Aboriginal (e.g., Inuit, Metis, North American Indian)
   ___ Chinese
   ___ Filipino
   ___ Japanese
   ___ Korean
   ___ South Asian
   ___ South East Asian
   ___ Latin American
   ___ Other
Accuracy and Honesty

The following items ask you about the quality of the data you provided us today. **You will receive credit for completing this HIT regardless of your responses.**

1. Did you provide good, high quality responses? Please respond “yes” or “no”:
   ______________________

2. Did you provide honest responses to all items? Please respond “yes” or “no”:
   ______________________

3. Please estimate how long it took you to complete this survey: ____ minutes

4. For completing this survey, we are offering participants US$0.90. Given the time and effort it took you to complete this task, do you think this is fair? Please let us know why or why not:
   ______________________
Distress & Feedback Measure

1. How distressing was completing this survey for you on average? Please respond using the scale from 1-7.

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very much</td>
</tr>
</tbody>
</table>

2. We would now like to provide you with the opportunity to deliver feedback on how this study made you feel. Responding to this item is optional. [Open Text Box]
Positive Mood Prime

Although we have asked you some difficult questions about your eating disorder, we recognize that recovery is an important achievement. In this part of the study, we would like for you take some time to reflect on a positive experience in your recovery journey. Please describe this positive experience and what you are most proud of using the space provided below.

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

[page break]

Anxiety Coping Technique (Optional)

Lastly, we would like to practice a brief grounding exercise. Before starting this exercise, pay attention to your breathing. Slow, deep, long breaths can help you maintain a sense of calm or help you return to a calmer state. Once you find your breath, please answer the questions below:

What are 5 things you can see around you? It could be a pen, a spot on the ceiling, anything in your surroundings.
______________________________________________________________________________

What are 4 things you can touch around you? It could be your hair, the chair you are sitting on, or the ground under your feet.
______________________________________________________________________________

What are 3 things you can hear? This could be the whirring of a fan or a car on the street.
______________________________________________________________________________

What are 2 things you can smell? Maybe you are in your office and smell pencil.
______________________________________________________________________________

What is 1 thing you can taste? Maybe you can still taste the coffee you had earlier.
______________________________________________________________________________
Appendix M: Debriefing Form

This study has been cleared by Carleton University Research Ethics Board-B (CUREB-B Clearance #116142).

**Thank you for participating in this study!** This post-survey information is provided to inform you of the exact nature of the research you just participated in.

**Compensation:** We will use your Worker ID to grant your reward for completing this study. Please note that this information will not be tied to your responses in any way.

**What are we trying to learn in this research?**
In this study, we are exploring people’s path to recovery. Our focus is on how nostalgic reverie (i.e., sentimental longing) for one’s eating disorder may be harmful or helpful in the recovery process.

**How did we attempt to increase self-discontinuity for some and self-continuity for others?**
All people in this study read about a supposedly real research finding that links eating disorders to how people living with an eating disorder sees themselves. We want to make it clear here that the research finding that you read were not real. They were made up by the research team for the purpose of this study. Specifically, we had some people read about a (fake) study in which it was found that having an eating disorder fundamentally changes the inner self (who you are). We then asked people to tell us how this is true for them. For other people, they read that an eating disorder does not change the inner self. They were then asked to tell us how this is true for them. We did this in order to make some people feel like their eating disorder has changed them where as other people feel that their eating disorder has not changed them. We are predicting that people who feel that who feel that the recovery process has not fundamentally altered the self will be more likely to stay on the recovery path (i.e., relapse will be less likely).

We could not tell you this before you participated in the study because this knowledge might have influenced how you responded to the items. Researchers have a term - demand characteristics – that relates to situations where participants unconsciously change their behavior when they are aware (or think they are aware) of what the experimenter expects to find. Researchers do everything possible to minimize the occurrence of demand characteristics. The most common means to do so is by not telling participants about the true purpose of the study and if there are any manipulations – manipulation like the one we used in the current study (i.e., randomly assigning participants to see one of two fictitious research summaries). Because we were only able to tell you of the procedures and not the purpose of this study (i.e., manipulation) at the outset, we will ask you for your informed consent on the following page to allow your data to be used for research and teaching purposes.

**Why is this important to scientists or the general public?**
The results from the current research will advance our understanding of the ups and downs people experience on the path to recovery. Findings may potentially also help health care
professionals address psychological factors that may interfere with recovery and help those who have an eating disorder prepare for behavior change.

**Is there anything I can do if I found this experiment to be emotionally upsetting?**
Yes. It is normal to feel some distress or anxiety when thinking about your eating disorder behavior. These emotions are sometimes necessary in order to research or study relations between somewhat sensitive variables. If you are feeling distressed from answering questions about this experience and would like to talk to someone about it, please contact your health care provider immediately. A list of helplines can also be found at [https://www.bulimia.com/topics/eating-disorder-hotline/](https://www.bulimia.com/topics/eating-disorder-hotline/).

What if I have questions later? If you have any questions or comments about this research, please feel free to contact one of the research personnel involved in this research:
- Isabella Bossom: IsabellaBossom@cmail.carleton.ca
- Mackenzie Dowson: mackenziedowson@cmail.carleton.ca
- Melissa Salmon: melissasalmon@cmail.carleton.ca
- Dr. Michael Wohl: michael.wohl@carleton.ca
- Dr. Nassim Tabri: NassimTabri@cunet.carleton.ca

Should you have any ethical concerns about this research, please contact the REB Chair, Carleton University Research Ethics Board-B (by phone: 613-520-2600 ext. 4085, or by email: ethics@carleton.ca). During COVID, the Research Ethics Staff are working from home without access to their Carleton phone extensions. Accordingly, until staff return to campus, please contact them by email. For all other questions about the study, please contact the researchers.

**Where can I get more resources on recovery and nostalgia research?**
If you are interested in learning more about recovery, relapse and eating disorder behaviors, please see the following articles:


If you are interested in additional eating disorder-related resources, The National Eating Disorders Association [https://www.nationaleatingdisorders.org](https://www.nationaleatingdisorders.org) has a wealth of current research, information, and services available. Additional resources can be found at [https://www.nimh.nih.gov/health/topics/eating-disorders/index.shtml](https://www.nimh.nih.gov/health/topics/eating-disorders/index.shtml)

**Thank you for participating in this study!** We greatly appreciate your participation
Appendix N: Consent for Use of Data

The purpose of an informed consent is to ensure that you now understand the true purpose of the study and that you agree to allow your data to be used for research and teaching purposes. Because you were only told of the procedures and not the purpose of this study at the outset, we are now asking for your consent to allow your data to be used for research and teaching purposes.

**Purpose.** In this study, we are exploring people’s path to recovery. Our focus is on how nostalgic reverie (i.e., sentimental longing) for one’s eating disorder may be harmful or helpful in the recovery process.

**Why was a manipulation necessary?** To repeat what was mentioned in the debriefing form, the purpose of this manipulation assesses the impact of heightening self-discontinuity. Importantly, the researchers created the research findings that you read in the initial study session – they are not real studies. We could not tell you this before you participated in the study because this knowledge might have influenced how you responded to the items. Researchers have a term - *demand characteristics* – that relates to situations where participants unconsciously change their behavior when they are aware (or think they are aware) of what the experimenter expects to find. Researchers do everything possible to minimize the occurrence of demand characteristics. The most common means to do so is by not telling participants about the true purpose of the study and if there are any manipulations – manipulation like the one we used in the current study (i.e., randomly assigning participants to see one of two fictitious summaries of research).

**Anonymity/Confidentiality.** The data collected in this study are anonymized and confidential. The consent forms are kept separate from your responses.

**Right to withdraw data.** You have the right to indicate that you do not wish your data to be used in this study. If you indicate this is your choice, then all measures you have provided will be destroyed.

**Signatures:** I have read the above description of the study investigating nostalgia and readiness to change. The data in the study will be used in research publications or for teaching purposes. My consent indicates that I agree to allow the data I have provided to be used for these purposes.

By checking this box, you agree to the following terms:

□ I have read the above form and understand and consent to the use of my data. I am aware I have the right to withdraw my data if I do not wish to have my data used in this study. Checking this box and clicking ‘Next’ indicates that I consent to the use of my data in the study.

□ I do not consent to the use of my data.
Appendix O: Linear Regression Assumption Checks

Prior to conducting the linear regression analyses, the necessary assumptions were checked to ensure the analyses were appropriate. The analyses included a continuous dependent variable, as well as a continuous independent variable, supporting the use of linear regression analyses.

**Independence of Observations**

As well, all cases were independently drawn with no known temporal component indicating that the assumption of independence of observations was met.

**Linearity**

A scatterplot of the relation between the independent variable (nostalgia) and the dependent variable (subjective recovery) suggested that the relation between the predictor and outcome variable was indeed linear (see Figure 7).

**Outliers**

The data was then examined for highly influential points (i.e., outliers). A total of 2 multivariate outliers were identified above or below 2.5 SD. These cases were excluded from the analyses.

**Normality**

Moreover, an inspection of the normal probability plot of standardized residuals for the self-discontinuity on subjective recovery indicated no major departures from normality (see Figure 8). However, the normality probability plot of nostalgia on subjective recovery appeared non-normal (see Figure 8) and contained a pattern indicating heteroskedasticity.
Heteroskedasticity

The presence of heteroskedasticity was confirmed using Daryanto’s (2020) Heteroskedasticity Test macro version 3. Specifically, the Breusch-Pagan and Koneker tests were statistically significant ($p < .001; p = .03$) when nostalgia was used as a predictor of subjective recovery. As such, Huber-White robust standard errors were used in the mediation analysis to address heteroskedasticity in the data.

Multicollinearity

The results indicated that there were no problematic correlations detected as the correlation between self-discontinuity and nostalgia was below .80, $r = -.20$, and the VIF values were all less than 1.04 suggesting the data were not multicollinear (Cohen et al., 2003).

Figure 7

*Scatterplot of the Relation between Nostalgia and Subjective Recovery*
Figure 8

Normal Probability Plots of the Studentized Residuals
Appendix P: Additional Analyses

Exploratory Factor Analysis

The seven items used to assess subjective recovery were included in an EFA. Results indicated two factors were extracted. A visual check of a scree plot confirmed that two factors were extracted. Standardized factor loadings were moderate and reported in Table 4. These results indicate that the subjective recovery measures, namely the three items that are recovery focused and the three items that are relapse focused, are empirically distinct and so they measure the different underlying constructs.

Table 4

Exploratory Factor Analysis of Subjective Recovery Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Each rung on this ladder represents where various people are in their eating disorder recovery. Select the number that indicates where you are now.</td>
<td>.548</td>
<td>.078</td>
</tr>
<tr>
<td>2. When thinking about my recovery, I am willing to continue on my recovery path.</td>
<td>.006</td>
<td>.785</td>
</tr>
<tr>
<td>3. When thinking about my recovery, I want to continue on my recovery path.</td>
<td>-.066</td>
<td>.739</td>
</tr>
<tr>
<td>4. When thinking about my recovery, I am motivated to continue on my recovery path.</td>
<td>.060</td>
<td>.892</td>
</tr>
<tr>
<td>5. When thinking about my recovery, I am likely to relapse.</td>
<td>.694</td>
<td>.281</td>
</tr>
<tr>
<td>6. When thinking about my recovery, I am worried about a relapse.</td>
<td>.994</td>
<td>-.180</td>
</tr>
<tr>
<td>7. When thinking about my recovery, I am concerned about whether I will relapse.</td>
<td>.910</td>
<td>-.051</td>
</tr>
</tbody>
</table>
Results with Subjective Recovery Relapse Focused Items

Descriptive Analyses

Table 5 includes the means, standard deviations, and correlation coefficients between each of the variables. Among these results, self-discontinuity was negatively associated with nostalgia ($r = -.20$, $p < .001$) and nostalgia was negatively associated with the subjective recovery relapse focused items ($r = -.12$, $p = .11$). The magnitude of the correlations was moderate. The association between self-discontinuity and subjective recovery relapse focused items was non-significant, $r = -.12$, $p = .10$.

Table 5

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-discontinuity</td>
<td>0.53 (0.50)</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Nostalgia</td>
<td>3.46 (1.76)</td>
<td>-.20**</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>3. Subjective Recovery Relapse Focused Items</td>
<td>4.19 (1.60)</td>
<td>-.12</td>
<td>-.12</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: *$p < .05$, **$p < .01$*

Mediation Analysis

The direct and indirect effects from the mediation analysis are reported in Figure 9. The indirect association between self-discontinuity and the subjective recovery relapse focused items via nostalgia was not statistically significant, *Indirect effect = .10, SE = .07, 95% CI [-.01, .25]* (see Figure 9). The self-discontinuity/self-continuity manipulation explained about 4% ($R^2 = .04$) of the variance in nostalgia. The model explained about 4% ($R^2 = .04$) of the variance in the subjective recovery relapse focused items, which is a small effect.
Figure 9

Mediation Model with Self-discontinuity/Self-continuity Condition as the Independent Variable, Nostalgia as the Mediator Variable, and Subjective Recovery (Relapse Focused) Items as the Dependent Variable

Note: * p < .05, ** p < .001. In parentheses are the standard errors (SE). Regression coefficients are unstandardized.