Psychology and Aging

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Online First Publication, December 1, 2022. https://dx.doi.org/10.1037/pag0000719

AMERICAN PSYCHOLOGICAL ASSOCIATION

Psychology and Aging

ISSN: 0882-7974

https://doi.org/10.1037/pag0000719

Recalling Self-Disruptive Events and Maintaining Self-Continuity in Adulthood

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Older adults exhibit a stronger sense of self-continuity than the young. How do they accomplish that? The present study examines that issue using a life story lens. We investigated (a) whether older adults differ from the young when narrating self-disruptive (i.e., compared to nondisruptive) personal life events in the extent to which they focus on stability, change, and event–event connections and (b) if these ways of narrating self-disruptive events mediate relations between a person's age and sense of self-continuity. Participants (N = 185; 53% women) completed a sense of self-continuity measure and orally shared two nondisruptive and two self-disruptive life events. Event narratives were transcribed, and best practices were used for reliable content analysis. Mixed analysis of variances showed that, regardless of age, individuals narrated greater stability when recalling self-disruptive than nondisruptive life events. Older adults described less change and made more event–event connections than younger adults when recalling self-disruptive events. In mediation analyses, older adults' stronger sense of self-continuity (i.e., compared to younger adults) was partially explained by their narrating more event–event connections in recalling self-disruptive life events. Narrating more stability was not a mediator but was directly related to having a greater sense of self-continuity, regardless of age. Post hoc analyses indicated that greater narration of change was related to a lower sense of self-continuity for older, not younger, adults. We draw on lifespan and life story theories to suggest that older adults' narratives may situate self-disruptive events in larger biographical context, fostering a greater experience of self-continuity.

Public Significance Statement

The present study addresses the long-standing developmental question of how people maintain a continuous sense of self in late life despite having experienced many life challenges that may have been disruptive. It highlights the importance of narrating one's life story in ways that situate single self-disruptive life events in the broader context of the many other events experienced in one's lived past.

Keywords: aging self, autobiographical memory, continuity and change, challenge, life story

Maintaining a sense of self-continuity, the feeling that I am the same person over time, is critical to human functioning (Dweck, 2017). It is well documented that older adults hold a stronger sense of self-continuity than the young (Rutt & Löckenhoff, 2016). Older adults' strong self-continuity is intriguing given that they have experienced numerous changes and have navigated many more decades of life (see also Troll & Skaff, 1997). What factors might contribute to strong feelings of self-continuity? One classic argument is that older adults maintain self-continuity by remaining in stable physical and social environments (e.g., Atchley, 1989). Although having a stable environment may indeed be useful in spurring feelings of continuity (Chandler et al., 2003), individuals encounter life challenges and losses that can disrupt the self (Brandtstädter & Greve, 1994) even in relatively stable environments. The present study takes a life story perspective (Bluck & Habermas, 2000), suggesting that the way one narrates past self-disruptive events may be related to having a strong sense of self-continuity in later life.

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The authors thank Krista Smith, Meagan Sullivan, and Melinda Rhodes for their assistance with coding memory narratives for this study. Findings appearing in this article have not been presented at peer-reviewed conferences. Partial ideas and findings were presented at the aging research poster exposition and competition for the 2018 Robert Levitt Awards with the Institute for Learning in Retirement at Oak Hammock at the University of Florida (UF), Gainesville, Florida, and at the 2017 UF undergraduate research forum with K. Smith and M. Rhodes as the lead presenters, respectively.

This work is partly based on the first author's dissertation, which was supported by the Jacquelin Goldman Dissertation Fellowship, the Madelyn Lockhart Dissertation Fellowship, and the Maurice C. Holmes and Frances A. Holmes Endowed Dissertation Fellowship.

Data used in this study and other related materials can be retrieved from https://osf.io/tknys/?view_only=ec797b01035c4d619c014828a91edef8.

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Life story theory maintains that feelings of self-continuity rely in part on individuals' narrating interconnectedness in their life story when recalling and interpreting life events (Bluck & Liao, 2013; McAdams, 2013). The use of narrative to maintain one's sense of self-continuity is considered particularly salient when life changes or self-disruptions occur (Habermas & Köber, 2015). *Autobiographical reasoning* (Habermas & Bluck, 2000) includes interpretive processes that help to create a coherent life story by highlighting stability, bridging change, and integrating across personally significant events and periods of one's life (see also Pasupathi et al., 2007; Waters et al., 2019). Theory suggests that narrative interpretive processes allow individuals to forge and maintain a sense of self-continuity, of "being me" over time.

Empirical research, however, that links narration of life events to individuals' feelings of self-continuity is sparse (Prebble et al., 2013), particularly in relation to age. The present study investigates whether older and younger people's sense of self-continuity is associated with the extent that they narrate disruptive events using different interpretive processes: with a focus on stability, a focus on change, or expression of event–event connections. These three interpretive processes have been suggested as critical to fostering a sense of self-continuity. To our knowledge, Habermas and Köber (2015) are the only researchers to have provided empirical support for the link between interpretive processes in personal memories and self-rated sense of self-continuity using a lifespan sample (for refugee samples, see Camia & Zafar, 2021; for qualitative research, see Bauer & Bonanno, 2001; Östman et al., 2015). They found that greater overall use of interpretive processes in narrating important life events was associated with a stronger sense of self-continuity. That was true, however, only for individuals who had recently experienced high levels of change in their lives (i.e., only two older adults in their sample). Given that, their study was not able to address the relation of interpretive processes in memory narrative to feelings of self-continuity in old age. The present study thus builds on that previous work.

Additionally, it remains unclear whether different processes, different ways of narrating one's personal past (i.e., specifically narrating stability, narrating change, and forging event–event connections), are uniquely important for older adults to maintain their sense of self-continuity. Some past research hints at an answer. McLean (2008) examined interpretive processes in personal memories that people consider highly self-characteristic (i.e., *self-defining memories*; Moffitt & Singer, 1994). She found older adults narrated greater stability and less change than the young. Given that, in designing the current research, we felt it important to assess relations of narrating stability, narrating change, and event–event connections to an independent measure of sense of self-continuity. Our focus on age fits with existing lifespan research on self-regulation. Brandtstädter (2009), for example, suggested that adaptive processes of self-regulation across the lifespan shift from self-change and expansion in early adulthood to self-maintenance and preservation in the second half of life.

Narrating Stability

Narrating stability when recalling unique personal life experiences has been theorized to foster a global sense of self-continuity (Bluck & Habermas, 2000; McLean et al., 2007). Narrating with stability involves a focus on describing the ways in which one's being and behavior have stayed the same, been consistent, over time. Being aware of what has been consistent acts as a foundation for telling one's life story. References to stability in a narrative affirm that life has had some constancy and that the self has existed, in some similar form, over time. Pasupathi et al. (2007) observed that one way people narrate stability is by indicating how a given past life event aligns with who they still are as a person today (e.g., I did charitable volunteer work as a teenager and am still a caring person today). That is, past life events are interpreted as biographical proof of their long-standing qualities, values, or beliefs. The ability to acknowledge stability in narrating life events should help individuals maintain a general sense of self-continuity in the face of disruptive life challenges.

Regarding adult age differences, Bluck et al. (2016) found that older adults (i.e., compared to younger people) narrated events with greater stability. Older individuals did so through reference to their own biographical information when recalling personal experiences (but not when recalling fictional stories). Their findings align with other research (i.e., McLean, 2008), showing that older adults narrate greater stability than younger people in recounting self-defining memories. These two studies suggest that narrating greater stability may be an interpretive process that older adults adopt more commonly than the young, and that fosters a strong sense of self-continuity.

Narrating Change

Being able to narrate life changes has also been theorized as helpful in forging a sense of self-continuity because doing so bridges the inevitable discontinuities that occur in life (Habermas, 2011; Pasupathi et al., 2007). Narrating these changes creates *causal coherence* (Bluck & Habermas, 2000) in one's life story. Pasupathi et al. (2007) observed two common ways of bridging discontinuities through narrating change. Individuals may narrate how experiencing a particular event was responsible for them having changed, thereby becoming who they are today (e.g., through being a caregiver for her, I really grew and became a strong person). Change can also be narrated as a personal revelation: Individuals describe how some preexisting but hidden self-characteristics emerged due to certain life events (e.g., I had not thought of myself as courageous before but realized then that I really am). In brief, life story theory suggests that all individuals face life challenges that may disrupt their sense of self but that if they are able to weave that change into their life stories, stories about who they are, they can feel and maintain a sense of self-continuity despite change.

As to age differences, McLean (2008) found that in telling self-defining memories, older adults narrated less change than younger people. She suggests that narrating change is likely important at any point in adulthood but given that young adulthood is a phase of change and growth (Ebner et al., 2006); it is normative that young people highlight changes when they talk about their lives. From a lifespan perspective, narrating change may be particularly beneficial to one's sense of self-continuity in young adulthood, when change and growth are developmentally normative. Researchers have argued that a limited focus on change is adaptive in later life (Brandtstädter, 2009). As such, while narrating change is part of any life story, its significance to one's sense of self-continuity may vary with one's point in the lifespan.

Narrating Event–Event Connections

Creating event–event connections is another interpretive process theorized to help create a sense of self-continuity. This interpretive

process situates a single life event in the context of the many other past that comprise one's larger, continuing story (Bluck & Habermas, 2000). When recounting a recent relationship event with a romantic partner, for example, the narrator may connect that event with events that occurred before and after it in that relationship. In the face of challenge, linking a single, disruptive event to other life experiences, to a greater whole, is a way of *authoring* one's story (McAdams, 2013). It enables the narrator to put that event in larger perspective and may smooth feelings of self-disruption, promoting a sense of self-continuity. This is in line with Libby and Eibach (2002), who suggested the benefits of adopting a bird's-eye view when reflecting on negative life events. Individuals who were able to take a larger perspective on a difficult event felt greater self-efficacy than those individuals who concentrated only on the isolated, difficult event itself.

Forging these event–event connections requires being able to look back over an extended period of one's life. As such, while this can occur at any time across adulthood, narrating such connections is suggested to emerge in later, rather than earlier, life phases (Habermas & Bluck, 2000). It may take time to develop the narrative skill of fully contextualizing a life event (Köber & Habermas, 2017). McLean (2008) is the single study that has focused on adult age differences in narrating event–event connections. Findings indicated only a trend toward older adults showing greater event–event connections. Given the theoretical basis for this expectation, however, the present study examined adult age differences in narrating event–event connections and their relation to adults' feelings of self-continuity.

The Present Study

We designed the study based on extant literature but also with an eye to overcoming some issues found in past research. For example, we restricted the period from which individuals recalled life events (i.e., last 6 years). This eliminates the concern that older adults can generate more distant events than the young, and thus simply have had more time to reflect on them (for a similar discussion, see Rice & Pasupathi, 2010). We also moved beyond past research by including a comparison event (i.e., narratives of nondisruptive events). This allowed analyses that explicitly determined the role of interpretive processes in managing life disruptive challenges as compared to nondisruptive, everyday life events (Habermas & Köber, 2015). Last, the study used a standard life experiences survey to elicit a variety of experienced life events but allowed individuals themselves to identify those that had experienced as most self-disruptive. This prevents the researchers from making biased assumptions about what is disruptive for people across different life phases (Carstensen & Freund, 1994).

The present study has two specific aims. The first is to evaluate adult age differences in narrating stability, change, and event–event connections in memories of self-disruptive events (i.e., compared to nondisruptive events) that occurred relatively recently in younger and older adults' lives. It was expected that older adults would narrate greater stability and less change and that they would create more event–event connections than younger people in recalling self-disruptive events. We also predicted that more use of all forms of interpretative processes would be observed in memories of self-disruptive than nondisruptive events. Our second aim, which is the primary interest of this research, was to test whether older adults' stronger sense of self-continuity (i.e., compared to the young) can be explained in part (i.e., partially mediated) by extent of narrating stability, change, and event–event connections in self-disruptive memories. We explored each of these interpretive processes as potential mediators.

Method

Transparency and Openness

The de-identified data on which the study conclusions are based, and codebooks for capturing stability, change, and event–event connections can be accessed via the URL provided in the author note (see Liao & Bluck, 2022). The life experiences survey used to elicit self-disruptive memories and the analytic code used for mediation analysis are also available. Analytic code was not provided for findings that can straightforwardly be reproduced using analyses of variance (ANOVAs). This study was not preregistered.

Participants

The sample included gender-balanced groups of 97 college students (51% women; M_{age} = 19.44, SD = 1.26; age range: 18–23) and 88 community-dwelling older adults (55% women; M_{age} = 71.71, SD = 6.85; age range: 61–92; 53% aged 71 and older). Younger participants were from the participant pool in a university psychology department. Older participants were recruited from local communities through listserv and flyers. Fourteen participants were excluded due to: reporting three or more incorrect responses out of five foil items on questionnaires (n = 3), not completing the study session (n = 1), or not following instructions to share self-disruptive life events (n = 11). Younger participants received course credit. Older adults received $15. Most older participants were Caucasian (92%). There was one African American, one Hispanic, and two Asian older adults in the sample. Three older adults checked other, with no elaboration. For younger participants, 53.6% were Caucasian, 14.4% were African American, 7.2% were Asian American, 20.6% were Hispanic/Latino, and 4.1% self-identified as other. Consistent with the college students, older participants were relatively well educated: 31.8% had a bachelor's degree, and 58% had some graduate school.

Power analyses were conducted using G*Power (Version 3.1.9). The effect sizes for age and gender-group differences in McLean (2008) were used as a basis. We confirmed that we had enough power for testing Aim 1 to detect between- and within-subject differences (effect sizes for partial η^2 ranging between 0.04 and 0.22; α = .05; power = .80; repeated-measures correlation = .10). The unique variance in well-being that was explained by memory variables in Liao et al. (2021) was used as a basis for Aim 2. We confirmed that our sample size was adequate to detect effects of the coded variables of interest (variance explained by special effect = 0.04; residual variance = 0.66; α = .05; power = .80; number of tested predictors = 3; total number of predictors = 6).

Measures

Dementia Screening

The six-item Orientation-Memory-Concentration Test (Katzman et al., 1983) was used to screen older participants to ensure they did not have dementia (Davous et al., 1987). Individuals were asked to

indicate the current year, month, and time of the day, count backward from 20 to 1, say calendar months in reverse order, and recall a short phrase heard earlier. Errors were weighted to yield a total possible error score of 28. The cutoff score was based on Carpenter et al. (2011): Individuals ($n = 9$) who received an error score of six or higher were not invited.

Sense of Self-Continuity

Seven items (Cronbach's $\alpha = .83$) adapted from Habermas and Köber (2015) and Sedikides et al. (2015) were used to measure one's sense of self-continuity over the recent past. Participants rated the following items on a 6-point scale (1 = *strongly disagree*; 6 = *strongly agree*) in regards to how continuous they feel with their self of 6 years ago:

> I feel connected with who I was; I feel that I can put myself "back in my shoes" of who I was; I feel that, at my core, I am the same person I was; there is continuity in who I have been as a person; important aspects of my personality have remained the same; when I look at pictures of myself it feels a little unfamiliar (reversed); when I think back, it feels a little unfamiliar (reversed).

Self-Disruptive Events Interview

Participants provided narratives, first of two nondisruptive events and then two self-disruptive events that had happened in the past 6 years. Memory-sharing order was fixed to ensure that narration of nondisruptive memories would not be contaminated by having already recalled self-disruptive memories. Participants were given 2 min to choose each event and 7 min to orally share each. After sharing each memory, participants answered questions related to the recalled event, including age of event, event valence, and personal significance.

Eliciting Nondisruptive Event Memories. The word cue method was used to elicit these memory narratives. Based on the affective norms for English words (Bradley & Lang, 1999), "corner" and "bus" were chosen as they were rated emotionally neutral and low arousal. Participants were asked to share the first memory that came to mind in reference to the provided cue, with the two cues provided in counterbalanced order. Before sharing, participants confirmed that the event had occurred within the instructed time frame. After sharing each memory, participants answered questions related to the narrated event. When participants finished sharing, a prompt was used to probe for any additional information (i.e., *can you remember anything else about where you were doing, thinking, or feeling?*).

Eliciting Self-Disruptive Event Memories. To aid in recalling a disruptive event to narrate, participants first completed a 57-item life experiences survey (adapted from Sarason et al., 1978) consisting of a range of life events. They indicated each event they had experienced over the past 6 years. For those that had occurred, they rated the extent to which each disrupted the self, from 1 = *not at all* to 7 = *extremely*. The instructions for doing the self-disruption rating, in terms of what self-disruption means, were:

> People often have events happen in their lives that somehow affect how they feel about who they are. For example, in everyday life you hear people say things like: somehow when that happened, I wasn't myself for a bit; or, after that happened, I just felt like a different person; or, during that time, I just wasn't able to be myself; or, at that time, I felt that maybe I wasn't really the person I had always thought I was.

Participants then shared two of the events they had just rated three or higher on self-disruption. When more than two events met this criterion, participants were instructed to freely select the two events they wanted to share. This evaluation of events as self-disruptive by the participant ruled out the concern that researchers might inaccurately judge certain events as disruptive without considering individuals' own perceptions. When participants finished sharing, the prompt described earlier was again used to probe for additional information.

Content Coding: Stability, Change, and Event–Event Connections

All memory narratives were transcribed verbatim and divided into idea units to facilitate coding. Number of idea units per transcript was used in analyses to control for potential differences in narrative length. Following Syed and Nelson's (2015) guidelines for establishing reliability, we used standard codebooks adapted from prior research (Bluck et al., 2016; Pasupathi et al., 2007) to train research assistants, who were blind to the hypotheses, to content analyze the narratives. Practice narratives from pilot testing and previous projects were used for coder training. Two coders were trained over several weeks to detect the presence or absence of stability and change one idea unit at a time. A second two coders were trained over several weeks to capture event–event connections. For all coded constructs, two trained coders rated all memory narratives independently and resolved disagreements at weekly meetings held under the supervision of the first author for that purpose, and to prevent coder drift.

Stability. Narration of stability was operationalized in terms of explicit mention of biographical facts or qualities showing the long-standing characteristics of the narrator. For example, in recalling a disruptive event, a participant showed stability by stating, "I've been playing soccer since I was five years old. That's just what I do." Another participant, describing how a geographical move challenged her sense of self, stated, "I'm old enough to know that fundamentally, I am who I am. So, if I am me in [a state], I can be me in [a different state]."

Change. Narration of change was operationalized as explicit statements about changes in oneself or new understandings of oneself in the recalled event. For example, in talking about a relationship conflict, a participant pointed to a moment of self-realization: "a scene from War of the Roses, a Michael Douglas movie, pinpointed what I felt for many years but did not realize. It was [that I had] a need for freedom." Another participant recalled her son being injured and how she changed, became different:

> this was probably the most extreme thing that's ever happened in my life … He had like 22 bones broken in his body … I became a person that was a different person. This affected every single aspect of my life.

Procedure for Coding Stability and Change. Coders first assigned a score of 1 (*presence*) or 0 (*absence*) for each idea unit in a narrative, for stability. When the entire narrative was complete, the same process was done for indicators of change. This process was completed for all four narratives for each participant. This procedure ensured coding of stability and of change was

mutually exclusive within a single idea unit but allowed stability and change to both be present and counted across the entire memory narrative. Interrater reliabilities for stability (intraclass correlation coefficient [ICC] = .94) and change (ICC = .90) were strong. They were calculated using 10% of narratives. On average, narratives consisted of 6.5 idea units. As a result, 10% of narratives was equal to approximately 468 idea units. To control for narrative length for both scores on stability and for change, the composite scores obtained across idea units were divided by the total number of idea units in that specific narrative. For example, a score of 0.13 for stability and 0.17 for change indicates stability occurred in 13% of the idea units, and change in 17% of the idea units, in a given narrative. Total mean scores of stability and change were then calculated for the two self-disruptive and the two nondisruptive memories, respectively, for use in analyses.

Event–Event Connections. Event–event connections were operationalized as references to a different life event when talking about the target life event. For example, when sharing a recent relationship conflict with her son, one participant referred to an earlier conflict with her husband, thereby connecting these two different events. As another example, in telling a self-disruptive event about illnesses suffered by close friends, the participant referenced different life periods in which she knew these friends:

> two of my oldest friends—we've been friends since we were 8 years old … they both came down with degenerate type of conditions … they're incapacitated in wheelchairs. I spent a lot of time talking with them about the shift in their life … We talked a lot about death … The fond memories outweigh the negative ones because the three of us shared an awful lot … through almost the rest of our lives … Reminds me of an event when I was young. My dad had belonged to a social group, an athletic kind of group, when he was young. And the picture of the group was always on the wall in our basement.

This narrative consists of several event–event connections: The target self-disruptive event of her close friends being ill recently was recounted in ways that embedded that in the large biographical context of their long-term friendships. She then also connects that to her father also having experienced important long-term friendships.

Procedure for Coding of Event–Event Connections. Coders counted the number of events that were mentioned in a memory narrative in addition to the target event (e.g., self-disruptive events) the participant shared. Interrater reliability, based on 7% of study narratives, was good (ICC = .93). To control for narrative length, percentage scores of event–event connections were also computed. Total mean scores were calculated for the two self-disruptive and the two nondisruptive memories, respectively, for use in analyses.

Covariates

For the mediation analysis, gender, self-reported health, and self-rated level of self-disruption of the event (reported before memory sharing) were included as covariates. Past research indicates potential links between these factors and sense of self-continuity (gender; Becker et al., 2018; health; Bundon et al., 2011; self-disruption; Camia & Zafar, 2021; Habermas & Köber, 2015). For self-reported health, participants provided ratings on a single item (1 = *very good*, 6 = *very poor*; Maddox, 1962). Both younger and older adults rated their health as *good* (*M*s = 1.88, 1.69, *SD*s = 0.82, 0.79). Level of self-disruption for a given event was the score produced through self-ratings on the life experiences survey (i.e., extent to which this event disrupted the self, from 1 = *not at all* to 7 = *extremely*) as described above.

Procedure

This study protocol, the self-continuity function of autobiographical memory in adulthood, was approved by the insitutional review board at the University of Florida (IRB2015-U-1135). Data collection started on November 9, 2015, and was completed on April 20, 2016.The dementia screening for older participants was administered over the phone and lasted about 8 min. Eligible participants were scheduled for an in-person session. On average, in-person sessions lasted about 1.5 hr. After signing an informed consent form, a trained research assistant provided scripted instructions that guided participants to respond to each questionnaire, which they did on a computer. Other measures that were collected but not included in the present study (see Mroz et al., 2020; Sharma et al., 2021) included affect, vocabulary, immediate word recall, personality, functions of autobiographical memory, time perspective, goal engagement and disengagement, self-functioning, personality continuity, well-being, and memory characteristics of the recalled events. After a 5- to 10-min break with refreshments, participants were guided through the audio-recorded interview to collect narratives of their life events.

Results

Descriptive Statistics

Older adults ($M = 4.38$, $SD = 0.64$) reported higher sense of self-continuity than younger people ($M = 3.32$, $SD = 0.82$), $t(183) = 9.7$, $p < .001$, consistent with past research (Rutt & Löckenhoff, 2016). Regarding recalled life events, younger and older adults recalled nondisruptive events that happened 2.7 years and 2.38 years ago (*SD*s = 1.58, 1.53), respectively. There were no age group differences, $t(181) = 1.41$, $p = .16$. Young and older adults recalled self-disruptive events that happened 2.32 years and 3.23 years ago (*SD* = 1.45, 1.65), respectively. Older adults' self-disruptive events were about 1 year older than younger adults', $t(183) = 4.04$, $p < .001$. Regardless, both age groups recalled relatively recent events in keeping with instructions. Both younger ($M = 1.82$, $SD = 0.86$) and older adults ($M = 1.7$, $SD = 1.05$; 1 = *negative*; 5 = *positive*) rated their recalled self-disruptive events as equally negative, $t(183) = 0.33$, $p = .74$. Young adults rated self-disruptive event memories as *quite a bit* disruptive ($M = 5.21$, $SD = 0.92$) whereas older participants rated their self-disruptive events as *moderately* disruptive ($M = 4.69$, $SD = 1.24$), $t(181) = 3.21$, $p < .01$. When asked to rate how personally significant the recalled memory is to them (1 = *not at all*; 5 = *extremely*), younger and older adults did not differ in their ratings for either nondisruptive events (*M*s = 2.95, 2.95; *SD*s = 1.07, 1.04) or self-disruptive events (*M*s = 4.25, 4.33; *SD*s = 0.78, 0.66), *F*s(1, 184) = .44, .59, *p*s = .51, .45.

The top five self-disruptive events that older adults shared were: death of a loved one (23.86%), relationship conflicts (18.17%), health issues of a close family member or friend (15.9%), personal injury and illness (13.64%), and negative change in daily social activities (10.8%). The top five events that disrupted younger people's sense of self were: relationship conflicts (31.44%), school-related failure (20.1%), death of a loved one (10.92%),

health issues of a close family member or friend (10.92%), and personal injury and illness (8.76%). Although participants in different life phases had different experiences (e.g., schoolwork for the young), both younger and older participants viewed death of a loved one, relationship conflicts, and health issues of their own and close family members and friends as challenging and self-disruptive (see Supplemental Materials, for event content for nondisruptive events).

Aim 1: Age Differences in Narrating Change, Stability, and Event–Event Connections in Memories of Self-Disruptive and Nondisruptive Events

The three types of coded interpretative sequences were unrelated (see Table 1) and thus entered into three separate 2 (age group) × 2 (gender) mixed ANOVAs with dependent variables of extent of stability, change, and event–event connections, respectively. Event type (nondisruptive, self-disruptive) was a within-subjects factor. Though not our primary focus, gender was included as a between-group factor so as not to miss potential interactions (see McLean, 2008). Table 2 provides means and standard deviations by event type and age group.

Narrating Stability

The expected main effect of event type was found, $F(1, 180) = 7.67$, $p < .01$, partial $\eta^2 = .04$ (see Table 2). Within-participants, greater stability connections were shown in narratives of self-disruptive than nondisruptive events, $t(183) = 2.84$, $p < .01$. The expected main effect of age group and the interaction effect of age group by event type were not significant, Fs(1, 180) = 0.15, 0.10, $p = .70, .75$. There was no gender main effect, Fs(1, 180) = 2.36, $p = .13$, or gender-related interaction effects, Fs(1, 180) = 1.68, 0.18, ps = .20, .67.

Narrating Change

As expected, main effects of age group and event type were found, Fs(1, 180) = 10.93, 50.85, $p < .01$, $p < .001$, partial η^2s = .06, .22. Younger adults narrated more change than older adults overall, $t(177.35) = 3.48$, $p < .01$. Greater narration of change was seen in self-disruptive than nondisruptive memories, $t(183) = 7.11$, $p < .001$ (see Table 2). These main effects were qualified by an age group by event type interaction, $F(1, 180) = 12.24$, partial $\eta^2 = .06$. Younger adults narrated greater change than older adults when recalling self-disruptive events, $F(1, 183) = 13.98$, $p < .001$, but the two age groups did not differ in their narration of change in recalling nondisruptive events, $F(1, 180) = 0.02$, $p = .89$ (see Figure 1). Gender main effect and gender-related interaction effects were not found: Fs(1, 180) = 0.58, 0.00, 0.97, ps = .99, .45, .97.

Event–Event Connections

Expected main effects of age group and event type were found, Fs(1, 180) = 15.52, 24.39, $p < .01$, $p < .001$, partial η^2s = .08, .12. No age group by event type interaction was seen, $F(1, 180) = 0.92$, $p = .34$. Older adults described more event–event connections than younger people in both nondisruptive, $F(1, 182) = 6.98$, $p < .01$, and self-disruptive memories, $F(1, 183) = 13.05$, $p < .001$. Greater event–event connections were seen in narratives of self-disruptive than nondisruptive events, $t(183) = 4.86$, $p < .001$ (see Table 2). There was a main effect of gender, $F(1, 180) = 13.86$, $p < .001$, partial $\eta^2 = .07$; women described more event–event connections (Ms = 0.14, 0.19, SDs = 0.13, 0.13) than men (Ms = 0.08, 0.15, SDs = 0.10, 0.14) across nondisruptive and self-disruptive events. Interaction effects involving gender were not significant, Fs(1, 180) = 0.23, 0.56, ps = .63, .45.

Aim 2: Relation of Age to Sense of Self-Continuity: Mediating Role of Interpretive Processes in Narrating Self-Disruptive Events

Our primary interest was to investigate whether the extent of narrating stability, change, and event–event connections would explain, in part, older adults' reporting a greater sense of self-continuity than younger people. A multiple-mediation model was tested (i.e., three mediators in one model; see Figure 2) using the built-in *Model 4* in Hayes' (2013) SPSS *process* macro. A bootstrapping technique of resampling 5,000 times and 95% bootstrap confidence intervals (CIs) was used to test indirect effects of the three interpretative processes (i.e., mediators) in the relation between age group (i.e., predictors) and sense of self-continuity (i.e., criterion). Note that the three interpretative processes were not correlated (rs ranging from −.05 to .03; ps ranging from .49 to .74). The concern regarding multicollinearity among predictors was ruled out. Gender, self-reported health, and level of self-disruption of events were included as covariates as they were correlated with either sense of self-continuity or coded variables (see Table 1).

A summary of the results is provided in Table 3. Age group had a significant total effect on sense of self-continuity, $B = 0.98$, $SE = 0.11$, 95% CI [0.77, 1.20]. This total effect of age represents the combination of a direct effect of age, $B = 0.86$, $SE = 0.11$, 95%

Table 1
Intercorrelations Among Sense of Self-Continuity, Covariates, and Interpretive Processes in Narratives of Self-Disruptive Events

Variable of interest	*M* (*SD*)	1	2	3	4	5	6	7
1. Sense of self-continuity	3.82 (0.9)	—						
2. Gender	0.52 (0.5)	−.11	—					
3. Self-rated health	1.79 (0.81)	−.24**	−.05	—				
4. Level of self-disruption	4.96 (1.11)	−.29**	.15*	−.06	—			
5. Narrating stability	0.04 (0.08)	.12	.14	.00	.12	—		
6. Narrating change	0.06 (0.10)	−.26**	−.03	−.02	.09	−.04	—	
7. Narrating event–event	0.17 (0.13)	.21**	.17*	−.08	−.03	.02	−.05	—

Note. Gender: 0 = men, 1 = women.
* $p < .05$. ** $p < .01$.

Table 2
Descriptive Statistics for Interpretive Processes by Age Group and Type of Event Narrated

	Younger group			Older group		
Coded variable	*M*	(*SD*)	Range	*M*	(*SD*)	Range
Nondisruptive events						
Narrating stability	0.02	(0.05)	0–0.25	0.02	(0.06)	0–0.40
Narrating change	0.01	(0.04)	0–0.33	0.01	(0.03)	0–0.17
Event–event connections	0.09	(0.12)	0–0.45	0.14	(0.12)	0–0.55
Self-disruptive events						
Narrating stability	0.04	(0.06)	0–0.27	0.04	(0.09)	0–0.60
Narrating change	0.08	(0.11)	0–0.43	0.03	(0.08)	0–0.44
Event–event connections	0.14	(0.11)	0–0.42	0.21	(0.15)	0–0.56

Note. Means for all interpretive processes indicate percentage of the narrative showing that process. For example, 0.14 for event–event connections in younger adults indicates that, on average, 14% of a narrative showed event–event connections.

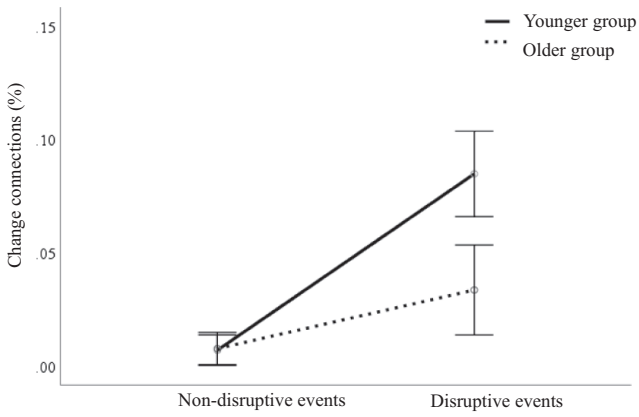
CI [0.64, 1.09], and a total indirect effect of the three interpretive processes, $B = 0.12$, $SE = 0.05$, 95% CI [0.03, 0.22]. Of the three mediators, event–event connections showed a small but significant indirect effect ($\beta = .06$), $B = 0.05$, $SE = 0.03$, 95% CI [0.01, 0.12]. That is, narrating event–event connections partially explained the positive association between age and sense of self-continuity (see Figure 2). Though not acting as a mediator, narrating greater stability was associated with a stronger sense of self-continuity, consistent with overall life story theory.

Post Hoc Analyses

Relation of Narrating Change to Sense of Self-Continuity: Age as a Moderator

Narrating greater change appeared to be linked to having a lower sense of self-continuity. The effect was marginally significant, $p = .06$ (see Table 3), but we considered that it might be worthwhile to explore potential age-differential links (i.e., age as a moderator) between narrating change and sense of self-continuity. This was based on theoretical views and past work suggesting that narrating change may be an interpretive process that is important for younger more than older adults (McLean, 2008). A multiple regression analysis was conducted: It included the predictors, age group (0 = younger adults; 1 = older adults), extent of narrating change, and the interaction term for age group by narrating change. Sense of self-continuity was the criterion. Covariates (i.e., gender, self-rated health, level of self-disruption) were included as they were significantly associated with sense of self-continuity in the analysis described above. Extent of narrating change and age group interacted to predict sense of self-continuity ($\beta = -.15$, $p < .05$). The negative coefficient indicated that narrating greater change in recalling self-disruptive events was associated with a lower sense of self-continuity—only for older adults (see Figure 3). Follow-up correlations by age group showed that greater narrating of change was linked to lower sense of self-continuity for older adults ($r = -.24$, $p < .01$). Contrary to the postulation, extent of narrating change in recalling self-disruptive events was unrelated to young people's sense of self-continuity ($r = -.04$, $p = .71$).

Figure 1
Narrating Change by Age Group and Event Type



Note. Error bars = 95% CI. CI = confidence interval.

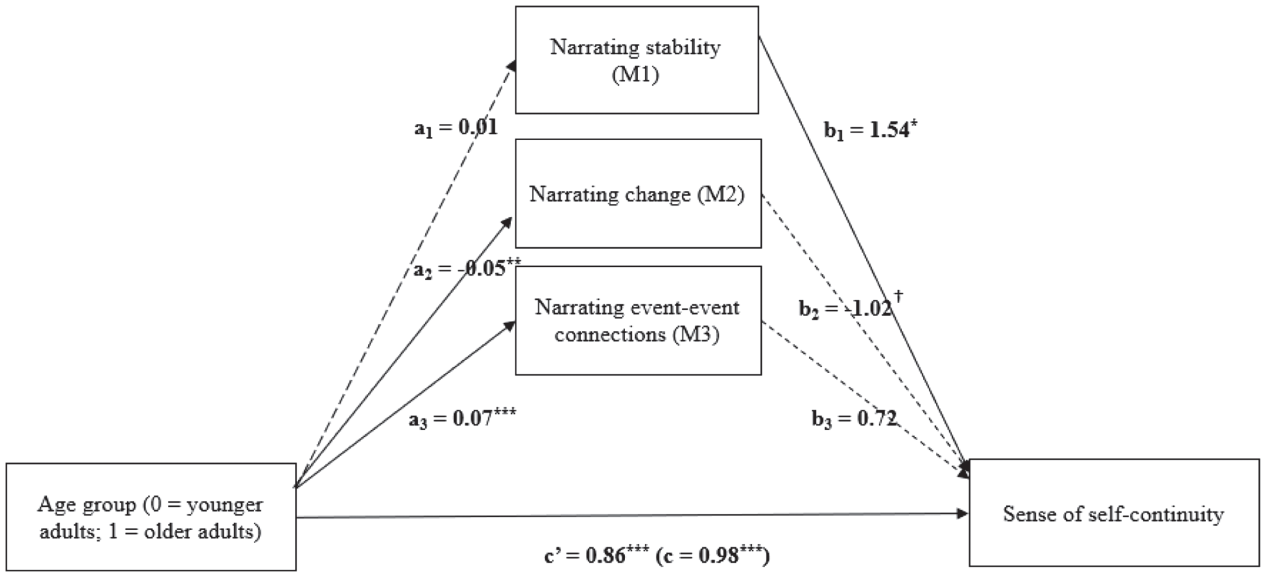
Sense of Self-Continuity in Relation to Different Stability-Change Profiles

The above finding that narrating greater change is related to older adults feeling a lower sense of self-continuity is not in line with theory. Life story theory maintains that narratives foster one's sense of self because they allow for bridging, explaining, change (Habermas, 2011; Pasupathi et al., 2007). Following that line of argument, greater focus on narrating change would allow the individual to integrate the disruptive event and feel a strong sense of self-continuity. As such, we wanted to follow-up on this effect.

In the analyses presented thus far, we treated change and stability independently and as continuous variables. In this post hoc analysis, we used a typology approach. We explored whether older adults who narrated self-disruptive events using both stability and change reported a greater sense of self-continuity than their same-age counterparts who had different stability-change profiles. Four groups were identified: narrated only stability (23.9%, $n = 21$), narrated only change (15.9%, $n = 14$), narrated both stability and change (8%, $n = 7$), and narrated neither stability nor change (52.3%, $n = 46$). One-way ANOVA indicated a profile effect, $F(3, 84) = 3.03$, $p < .05$, partial $\eta^2 = .10$. Older adults who narrated only change reported a lower sense of self-continuity ($M = 3.93$, $SD = 0.71$) than those who narrated both stability and change ($M = 4.61$, $SD = 0.65$), those who narrated only stability ($M = 4.41$, $SD = 0.58$), and those who showed neither ($M = 4.46$, $SD = 0.61$). When using the same approach to

Figure 2

Indirect Effects of Interpretive Processes on the Association Between Age Group and Sense of Self-Continuity



Note. The total indirect effect ($c - c' = a_1b_1 + a_2b_2 + a_3b_3$) was significant 0.12, [0.03, 0.22]. In examining aspect of interpretative process, the indirect effects of narrating stability, $a_1b_1 = 0.02$, [−0.03, 0.07], and narrating change, $a_2b_2 = 0.05$, [−0.01, 0.12], were not significant. The indirect effect of narrating event–event connections was significant, $a_3b_3 = 0.05$, [0.01, 0.12]. For simplicity, covariates were not included in the figure.
$^{\dagger}p < .10$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

examine group differences in younger participants, no stability-change profile effect was found, $F(3, 97) = 0.84$, $p = .47$.

Discussion

The present study investigated how ways of narrating past self-disruptive events are related to older adults' strong feelings of self-continuity. Replicating and extending past research (McLean, 2008; Pasupathi & Mansour, 2006; Rice & Pasupathi, 2010; Rutt & Löckenhoff, 2016), the present study found that older adults reported a greater sense of self-continuity than do the young. Older people expressed less change when recounting self-disruptive events and narrated more event–event connections overall. Their greater use of event–event connections in recalling self-disruptive events partially explained their greater (than the young) sense of self-continuity. Regardless of age, narrating greater stability was related to a stronger sense of self-continuity. Post hoc follow-up analyses suggested that the relation of narrating change to sense of self-continuity might be more complex than previously theorized in the literature (Bluck & Liao, 2013; Habermas, 2011; McLean, 2008; Pasupathi et al., 2007). Our exploratory post hoc analyses highlight the importance of explicit attention to individuals' life phase when examining the role of autobiographical memory in maintaining self-continuity. We draw on life story and lifespan theoretical frameworks to further discuss the findings.

Interpretative Processes in Nondisruptive and Self-Disruptive Event Narratives

In designing the current research we employed recall of nondisruptive events as a comparison to test the claim that interpretative processes are a critical means that individuals use to bridge discontinuities in the face of disruption (Chandler et al., 2003; Habermas & Köber, 2015). We found that all three types of interpretive processes were more frequently observed in self-disruptive than nondisruptive event memories. These findings support the idea that individuals attempt to bridge disruptive events by highlighting stability, explaining change, and connecting self-disruptive events with other life experiences—regardless of age. These consistent patterns likely reflect a basic psychological reaction: When one's sense of self is disrupted, adults of all ages are motivated to resolve that discomfort (Dweck, 2017). One way of doing that may be to constructively interpret life challenges through narrative. Interpretive narration is less needed in the case of recalling nondisruptive personal events (e.g., traveling oversea, working on a home remodel). Another intriguing finding allowed by use of everyday nondisruptive events (i.e., elicited by word cues) as a comparison event is that older adults narrated more event–event connections than younger adults when they recalled both self-disruptive and nondisruptive life events. This complements the age trend finding on event–event connections in McLean (2008). It also aligns with the theory (Bluck & Habermas, 2000) that as people age, they are more able to see life events, whether everyday or significant events, from the lens of a life story, rather than as a sequence of unrelated incidents. This age differential pattern in narration holds implications for feelings of self-continuity in old age, as described next.

Narrating Event–Event Connections: Older Adults' Stronger Sense of Self-Continuity

The main focus of this research was to examine whether the way older individuals narrate self-disruptive events (e.g., getting a divorce, close family members falling ill) is related to their stronger (i.e., than the young) sense of self-continuity. One interpretive

Table 3
Summary of Multiple-Mediation Analysis

Predictors	Path	Narrating stability			Path	Narrating change			Path	Narrating event–event			Path	Self-continuity		
		B (*SE*)	95% CI	*p*		*B* (*SE*)	95% CI	*p*		*B* (*SE*)	95% CI	*p*		*B* (*SE*)	95% CI	*p*
Age group (X)	a_1	0.01 (0.01)	[−0.01, 0.03]	.43	a_2	−0.05** (0.02)	[−0.08, −0.02]	.001	a_3	0.07** (0.02)	[0.04, 0.11]	<.001	c'	0.86** (0.11)	[0.64, 1.09]	<.001
Mediators																
Narrating stability		—	—	—		—	—	—		—	—	—	b_1	1.54* (0.65)	[0.25, 2.83]	<.05
Narrating change		—	—	—		—	—	—		—	—	—	b_2	−1.03† (0.54)	[−2.09, 0.42]	.06
Narrating event–event connections		—	—	—		—	—	—		—	—	—	b_3	0.74† (0.40)	[−0.06, 1.54]	.07
Covariates																
Gender		0.02 (0.01)	[−0.01, 0.04]	.11		−0.01 (0.01)	[−0.03, 0.02]	.70		0.04* (0.02)	[0.01, 0.08]	<.05		−0.27* (0.11)	[−0.47, −0.06]	<.05
Self-rated health		0.00 (0.01)	[−0.02, 0.01]	.90		0.00 (0.01)	[−0.02, 0.02]	.89		−0.02 (0.01)	[−0.04, 0.01]	.16		0.20** (0.06)	[−0.32, −0.07]	<.01
Level of self-disruption		0.01 (0.01)	[−0.00, 0.02]	.13		0.00 (0.01)	[−0.01, 0.02]	.67		0.00 (0.01)	[−0.02, 0.02]	.98		−0.13* (0.05)	[−0.22, −0.03]	.01
		$F(4, 178) = 1.52$				$F(4, 178) = 3.35$				$F(4, 178) = 5.57$				$F(7, 175) = 20.7$		
		$R^2 = .03$				$R^2 = .07$				$R^2 = .11$				$R^2 = .45$		

Note. *SE* = standard error. Age group: 0 = young adults, 1 = older adults. Gender: 0 = men, 1 = women. CI = confidence interval.
† $p < .10$. * $p < .05$. ** $p < .01$.

process, the extent of narrating event–event connections, stood out in this regard. That is, older adults contextualized self-disruptive life events more often, linking them to their larger life story through describing connections with other events they have experienced over time (see also Bluck et al., 2016). This partially accounted for their having a greater sense of self-continuity than the young.

This finding is consistent with life story theory (Bluck & Habermas, 2000) which suggests weaving together the events of one's life provides a coherent sense of biographical identity, one that should promote feelings of self-continuity. In recalling an event that might have remained disruptive to self-continuity, older adults more frequently than the young, connected the event to other relevant experiences from across their life. This integration of an event into one's larger life story, the constructed story of the self over time, may help to smooth disjuncture. Instead of focusing on the self-disruptive event in isolation, older people tend to embed it in biographical context as part of their continuing story (see also Libby & Eibach, 2002). The example presented in the Methods shows how a participant connected her own life challenge to the challenges faced by her lifelong friends, and memories of her father having important lifelong friends when she was young. Though there are inevitable losses and declines in later life (Baltes & Smith, 2003), older individuals appear to show a gain in holding a strong sense of self-continuity. Our findings suggest that their ability to contextualize self-disruptive events within their personal life story, creating a continuous thread, may be an asset that supports self-continuity as an aspect of resilient aging (Sharma et al., 2021; Staudinger et al., 1993).

Narrating Stability: Maintaining Sense of Self-Continuity in Older and Younger Adults

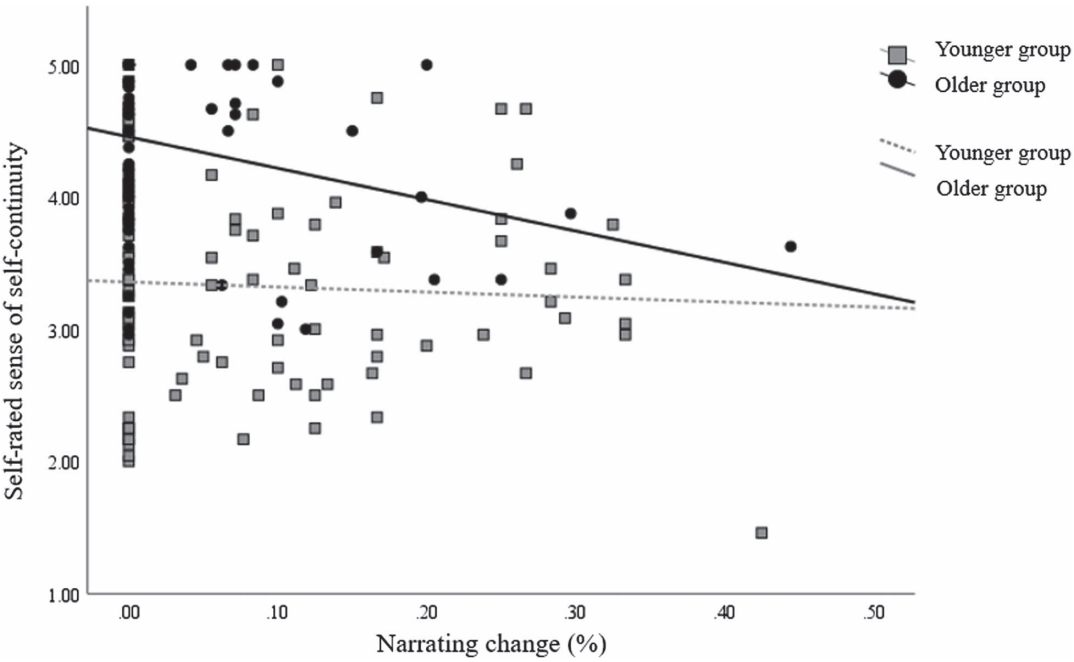
Older adults are shown to narrate memories with greater stability in previous research (McLean, 2008). When recounting disruptive life events from their recent life, by the very nature of such events, it is unlikely that people will talk about stability. In the present study, only 4% of idea units in self-disruptive memory narratives represented stability, with no difference by age. This low percent may seem unsurprising: One might intuitively expect less stability to be narrated in self-disruptive events (the present study) than, for example, self-defining events (McLean, 2008: 19% in younger and 52% in older adults). Within this low frequency of narrating stability, however, the extent to which one was able to narrate self-disruptive events with a focus on stability was related to a greater sense of self-continuity (as independently assessed). That is, individuals who grounded their disruptive event narratives by referring to immutable biographical facts and long-standing qualities (e.g., *I've been playing soccer since I was five years old. That's just what I do*) also reported having a greater sense of self-continuity. Biographical facts and long-standing self-attributes have been theorized to be part of semantic knowledge about the self and seen as building blocks of a coherent life story (Conway et al., 2004). Our findings support that theoretical standpoint.

Narrating Change: Complex Interplay With Sense of Self-Continuity in Older Adults

Consistent with past research (McLean, 2008), older adults in the present study narrated less change than younger people when

Figure 3

Narrating Less Change in Self-Disruptive Memories Relates to Sense of Self-Continuity Only for Older Adults



recounting self-disruptive events. Our findings also show that many older adults narrated self-disruptive events without reference to either stability or change. This aligns with Rice and Pasupathi (2010). They found that when asked to describe an event that was not self-typical in their recent lives, older adults were less likely than younger people to explicitly state the recalled event posited a threat to the self. Older adults were also less likely than the young to narrate resolutions to the nontypical event. Our mediation analyses showed, however, that narrating change was not a way of bridging discontinuity, contrary to the life story literature (Habermas, 2011; Pasupathi et al., 2007). In fact, lower narration of change was marginally related to stronger self-continuity. To better understand the role of narrating change, we conducted two post hoc analyses: a moderation analysis with age as a moderator, and a typological approach through creating stability-change profiles. Both analytic approaches indicated narrating change was only relevant to older adults' sense of self-continuity. Narrating change was moderated by age, with relations between change and self-continuity for the old, but not the young. When stability-change profiles were tested, profiles did not differ among the young but did so for the older participants. Older adults who narrated only change when recalling self-disruptive events reported a lower sense of self-continuity than older adults in any other profiles (i.e., narrate only stability, change and stability, narrate neither).

These findings may be understood from a lifespan developmental perspective (for a review, see Sneed & Whitbourne, 2005). One model (i.e., Brandtstädter, 2009) maintains that as people age their self-related developmental task shifts from pursuing growth and change to maintaining the established self, and that this shift is appropriate. Downplaying discrepancies (i.e., change) is normative and a beneficial self-regulatory process that is important for older adults to maintain a sense of self-continuity. The age differences in narrating self-constructions found in Rice and Pasupathi (2010) also support this lifespan view. When talking about self-relevant events, older adults in general were less self-centered (e.g., using fewer self-focused pronouns) than younger people. When talking about non-self-typical events, most older adults left the challenge unresolved.

As such, older adults who focus solely on change in narrating life challenges may be at a disadvantage. Our finding that older adults narrated less change than younger adults (also seen in McLean, 2008) may be understood as developmentally adaptive. Another model (i.e., identity process model; Sneed & Whitbourne, 2003) highlights older adults' ability to adopt a balanced identity by focusing on self-consistency while being open to novel change. Their model also aligns with the view of development as an ever-changing life story: Healthy life stories at any age enable stability and allow change (for a discussion, see McAdams, 2019). Though replication with larger samples is needed, our post hoc finding that those who narrated both stability and change reported stronger self-continuity than those who described only change fits well with both lifespan and life story perspectives.

Limitations

The present study has limitations. First, concerning the sample, our participants were well educated and mainly Caucasian, particularly in the older group. Note however, there were no race differences in ratings of key variables in younger adults (i.e., self-continuity, narration of stability, change, event–event connections). We did not have the statistical power to test for potential race effects on variables of interest in older participants.

We also did not include middle-aged participants, an age group who may be balancing between stability and change

(Lachman et al., 2015). Recruiting a diverse sample of participants from a range of ages, racial backgrounds, and educational levels would greatly enhance generalizability. We were also unable to disentangle age differences and cohort effects. For example, younger and older adults' differences in narrating self-change and event–event connections may reflect cohort differences in the value of self-expression at different periods in time (Drewelies et al., 2019).

Next, we argued, based on life story theory (Bluck & Habermas, 2000; Pasupathi et al., 2007), that narration of self-event and event–event connections are interpretive processes that support older adults' strong sense of self-continuity. We acknowledge, however, that our mediation analyses with cross-sectional data do not rule out the reciprocal possibility: That older adults' strong sense of self-continuity leads to greater narration of event–event connections. Making directional claims would require a prospective longitudinal design to assess sense of self-continuity before and after one's experience of self-disruptive events (Maxwell & Cole, 2007; O'Laughlin et al., 2018).

Additionally, we chose everyday nondisruptive events as our comparison. Future studies should evaluate age patterns in self-disruptive event narration in comparison to different event types (e.g., nondisruptive but important negative and positive events, normative and nonnormative disruptive and nondisruptive events). Using both recent and distant past events might also be studies to better articulate the contexts in which interpretive processes are salient and relevant to adults' feelings of self-continuity. Moreover, we did not code valence of change connections and did not have the power to test that issue. Future research might investigate whether positive and negative changes differentially link to one's sense of self-continuity. Last, more work is needed to articulate other interpretive processes that older adults may use and are related to their strong sense of self-continuity. For example, forging narrative coherence by creating life stories that are temporally, culturally, and thematically coherent (Bluck & Habermas, 2000; Reese et al., 2011; Waters et al., 2019) may help maintain a sense of self-continuity after experiencing disruption.

Conclusion

How do older people maintain a strong sense of self-continuity despite inevitable life experiences that may disrupt their sense of self? Grounded in a life story approach, our findings suggest that older adults' greater tendency (than the young) to narrate disruptive events by relating them to other events that have occurred in their lives, to some extent accounts for their greater feelings of self-continuity. In addition, older adults who focus only on change when narrating disruptive events have a lower sense of self-continuity than those who combine change with stability. In a life phase in which much of life is behind, and the focus is on maintenance as a developmental task, focusing too much on single events, and on change, may not serve older people's feelings of continuity. Adaptive use of narrative appears to be inextricably tied to the life phase of the person doing the remembering. The current research points to the value of combining a life story with a lifespan developmental approach to understand how individuals frame and reframe their lived experiences to promote a healthy sense of self-continuity.

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Received March 11, 2022
Revision received October 9, 2022
Accepted October 20, 2022 ■