

Neubauer, Andreas B.; Smyth, Joshua M.; Sliwinski, Martin J.

Age differences in proactive coping with minor hassles in daily life

formal und inhaltlich überarbeitete Version der Originalveröffentlichung in:

formally and content revised edition of the original source in:

*The journals of gerontology / Series B, Psychological sciences and social sciences 74 (2019) 1, S. 7-16,
10.1093/geronb/gby061*



Bitte verwenden Sie in der Quellenangabe folgende URN oder DOI /

Please use the following URN or DOI for reference:

urn:nbn:de:0111-dipfdocs-168832

10.25657/02:16883

<https://nbn-resolving.org/urn:nbn:de:0111-dipfdocs-168832>

<https://doi.org/10.25657/02:16883>

Nutzungsbedingungen

Gewährt wird ein nicht exklusives, nicht übertragbares, persönliches und beschränktes Recht auf Nutzung dieses Dokuments. Dieses Dokument ist ausschließlich für den persönlichen, nicht-kommerziellen Gebrauch bestimmt. Die Nutzung stellt keine Übertragung des Eigentumsrechts an diesem Dokument dar und gilt vorbehaltlich der folgenden Einschränkungen: Auf sämtlichen Kopien dieses Dokuments müssen alle Urheberrechtshinweise und sonstigen Hinweise auf gesetzlichen Schutz beibehalten werden. Sie dürfen dieses Dokument nicht in irgendeiner Weise abändern, noch dürfen Sie dieses Dokument für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, aufführen, vertreiben oder anderweitig nutzen.

Mit der Verwendung dieses Dokuments erkennen Sie die Nutzungsbedingungen an.

Terms of use

We grant a non-exclusive, non-transferable, individual and limited right to using this document.

This document is solely intended for your personal, non-commercial use. Use of this document does not include any transfer of property rights and it is conditional to the following limitations: All of the copies of this documents must retain all copyright information and other information regarding legal protection. You are not allowed to alter this document in any way, to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public.

By using this particular document, you accept the above-stated conditions of use.

Kontakt / Contact:

DIPF | Leibniz-Institut für
Bildungsforschung und Bildungsinformation
Frankfurter Forschungsbibliothek
publikationen@dipf.de
www.dipfdocs.de

Mitglied der


Leibniz-Gemeinschaft

Age Differences in Proactive Coping with Minor Hassles in Daily Life

Andreas B. Neubauer, PhD

German Institute for International Educational Research (DIPF), and Center for Research on Individual Development and Adaptive Education of Children at Risk (IDeA), Frankfurt am Main, Germany

Joshua M. Smyth, PhD & Martin J. Sliwinski, PhD

The Pennsylvania State University

Correspondence concerning this article should be addressed to Andreas B. Neubauer, German Institute for International Educational Research (DIPF), Frankfurt am Main, Germany. E-Mail: neubauer.andreas@dipf.de

Abstract

Objectives: Age differences in the exposure to minor hassles in daily life have been postulated by socio-emotional selectivity theory and been reported by previous research, with older adults reporting fewer stressors. The present study examined two potential mechanisms explaining this reduction in reported stressor exposure with advancing age: age-related changes in proactive coping and in the threshold of labeling an event as stressor.

Method: Participants ($N=178$; 20-79 years; $M=49.5$; $SD=17$; 51% female) were investigated in a measurement burst study consisting of three measurement bursts (each comprised of five daily assessments for seven consecutive days), separated by nine months each.

Results: Older age was unrelated to reporting an event or the thresholds for labeling the event as a stressor, but was positively related to self-reported use of proactive coping and negatively related to reported event severity.

Discussion: Results are consistent with the view that older adults engage in more proactive coping to deal with minor hassles in their daily lives to manage these problems before they become more stressful. Older adults did not report fewer potentially stressful events but they reported these events as less unpleasant. The adaptive value of proactive coping, in particular for older adults, is discussed.

Keywords: ambulatory assessment; stress; coping behavior

Age Differences in Proactive Coping with Minor Hassles in Daily Life

Most people regularly experience minor hassles such as arguments, minor health-related incidents or unpleasant events at work in their daily lives. Although common in everybody's daily lives, there has been much work pointing to potential inter-individual differences in the prevalence of these stressors. In that realm, a vast amount of research has investigated age differences in both the prevalence of, and response to, stressors experienced in daily life. From the perspective of socio-emotional selectivity theory (SST; Carstensen, Isaacowitz, & Charles, 1999), older age is expected to be associated with a reduced number of stressors encountered in daily life. According to SST the perception of reduced time to live leads to a motivational shift towards positive experiences and emotionally meaningful activities, motivating older adults to proactively reduce the number of negative encounters in their everyday lives. The strength and vulnerability integration model (SAVI; Charles, 2010) further emphasizes the role of time already lived: According to this account, older adults' life experience enables them to "navigate their worlds more successfully than younger adults" (Charles, 2010, p. 1073) and by this preventing daily hassles more effectively. Hence, SST and SAVI concur on predicting fewer stressors reported by older versus younger adults, a prediction that has gained some empirical support (Aldwin, Jeong, Igarashi, & Spiro, 2014; Aldwin, Sutton, Chiara, & Spiro, 1996; Almeida, 2005; Almeida & Horn, 2004; Charles et al., 2010; Stawski, Sliwinski, Almeida, & Smyth, 2008).

Comparatively little is known, however, *how* older adults manage to experience fewer stressors. In essence, this question pertains to age-related differences in proactive coping, a construct that Aspinwall and Taylor (1997) defined as "efforts undertaken in advance of a potentially stressful event to prevent it or to modify its form before it occurs" (p. 417). Age differences in proactive coping employed in people's everyday lives have, to our knowledge, not been investigated thus far. To address this gap in the literature, we asked participants at

occasions when no stressor had occurred why they thought that nothing stressful had happened to them, allowing us to assess proactive coping in their daily life.

Although age differences in proactive coping might be one explanation for the previously reported age differences in the amount of daily stressors reported, a supplementary (but not necessarily alternative) explanation for the reduced number of stressors reported with advancing age is that older adults might not encounter fewer potentially negative events, but that older age is associated with a higher threshold to appraise a negative event as a stressor: Older and younger adults might encounter a similar negative event but they might differ in the probability of labeling this event as a stressor. We addressed this possibility by inquiring about both stressful events, and similar events that were encountered but that were not perceived as stressors. The next sections are organized as follows. First, we summarize prior research on age differences in proactive coping, distinguishing this construct from both reactive coping and anticipatory coping (for further elaboration on this issue see Neupert, Neubauer, Scott, Hyun, & Sliwinski, 2018). Next, we discuss prior empirical research hinting at potential age differences in the threshold for reporting a negative event as a stressor. We then present results from a measurement burst study, examining age differences in proactive coping and occurrence of negative events versus stressors.

Age Differences in Proactive Coping

Prior research on age differences in coping has almost exclusively targeted differences in either responses to a stressor that has already occurred or responses to a hypothetical stressor. An example for the former scenario is a study by Brennan, Holland, Schutte, and Moos (2012). In their 20-year longitudinal study, these authors asked their study participants to identify “the most important problem or stressful situation they had experienced during the last 12 months” (Brennan et al., 2012, p. 307). Participants were then presented with a list of strategies and asked to rate how frequently they had employed these strategies to cope with

this stressor. This study and similar research (e.g., Aldwin et al., 1996; Whitty, 2003) investigated retrospective reactive coping, that is, the extent to which participants reported employing specific strategies to cope with a stressor that had occurred at some point in the past. However, people might use different strategies to cope with stressors that have already occurred than to cope with stressors before they occur. According to Aspinwall and Taylor (1997), the latter form of coping can further be divided into anticipatory coping and proactive coping. Anticipatory coping in this framework can be understood as any behavior that prepares the individual to cope with a stressor once it is likely to occur (Neupert & Bellingtier, 2018). Although anticipation is, overall, considered adaptive in the sense that it is expected to have alleviating effects on the stress response (Aspinwall & Taylor, 1997), evidence is accumulating suggesting that anticipatory stress can have negative consequences as it is associated with higher negative affect (Neubauer, Smyth, & Sliwinski, 2018; Scott, Kim, Smyth, Almeida, & Sliwinski, 2018) and interferes with cognitive performance (Hyun, Sliwinski, & Smyth, 2018).

The focus of the present study is on proactive coping; that is, on efforts aiming to prevent a stressor (Aspinwall & Taylor, 1997). Arguably, the most effective coping with a stressor (at least in the short run) is not to encounter it in the first place. One way to reduce the probability of encountering a stressor is to avoid situations that might potentially become stressful. Age differences in stressor avoidance have been found primarily with regard to interpersonal stressors. Increased use of such avoidant coping strategies with old age has been suggested as a mechanism leading to fewer arguments reported by older versus younger adults (Blanchard-Fields, 2007). Supporting this prediction, Birditt, Fingerman, and Almeida (2005) reported data suggesting that older adults are more likely to do nothing in response to an interpersonal conflict and less likely to engage in arguing than younger adults. Further evidence for higher conflict avoidance with advancing age comes from studies employing

behavioral vignettes (Blanchard-Fields, Mienaltowski, & Seay, 2007; Charles, Carstensen, & McFall, 2001; Oberhauser, Neubauer, & Kessler, 2017). In these studies, participants are presented with scenarios describing everyday problems (e.g., “You want to buy a birthday present for a good friend, but you are not able to afford it.”) and asked to indicate how likely they would engage in specific behaviors to cope with these problems (e.g., “You ignore the birthday.”). These studies showed that older adults reported higher endorsement for choosing conflict avoidant behaviors than younger adults (e.g., Blanchard-Fields et al., 2007).

However, similarly to the studies assessing retrospective reactive coping (Brennan et al., 2012), these studies also assessed responses to stressors that had already occurred (Birditt et al., 2005), or hypothetical responses to stressors after they would have occurred (Blanchard-Fields et al., 2007); hence, they did not address age differences in proactive coping. Furthermore, these studies typically focused on a passive form of proactive coping: avoidance. It is important to note that Aspinwall and Taylor (1997) state that “effective proactive coping is virtually always active” (p. 417). We are aware of only one study that has investigated age differences in *active* forms of proactive coping: Ouwehand, Ridder, and Bensing (2006) presented their participants (ages 50 to 70 years) with vignettes describing situations that pose the potential for future threat (e.g., health related problems). No age differences were found in proactive coping reported in this study (Ouwehand, Ridder, & Bensing, 2008).

In conclusion, although there has been a substantial amount of research on age differences in reactive coping and passive forms of proactive coping (avoidance), investigations of age differences in active proactive coping have been limited to one study using a sample with restricted age range and hypothetical scenarios. In the present study, we investigated age differences in proactive coping using a measurement burst design (Sliwinski, 2008) in a sample with a broader age range (20 to 79 years) and targeting proactive coping in

study participants' daily lives. Specifically, we asked study participants five times a day (a) if a potentially stressful event has occurred and (b) if not, why they think that nothing stressful has happened to them. Based on SST and SAVI, we expected that older adults would be more likely to report active proactive coping as a reason for no stressor occurrence.

Stressor Events versus Non-Stressor Events versus Nonevents

“Nonevents are rarely selected for scientific investigations” (Aspinwall & Taylor, 1997, p. 418), but they are arguably very important to investigate proactive coping. Considering only occasions when no stressor was reported might confound nonevents and negative non-stressor events (i.e., events that are potentially threatening but that are not reported as stressful events). Assessments of stressors typically combine two steps: First, individuals have to determine whether a certain event (e.g., an argument) has occurred in a given time span (e.g., today). Second, they need to determine whether the event was severe enough to surpass the threshold of being labeled “stressor”. The second step, thus, includes the appraisal of the event (Lazarus & Folkman, 1984). For example, when confronted with the question “Did anything happen at home that most people would consider stressful?” (Almeida, Wethington, & Kessler, 2002), both younger and older adults might remember that their dishwasher broke today, but older adults might have a lower probability of appraising this event as a stressor, and hence report that nothing stressful happened at home. In fact, Almeida and Horn (2004) reported data showing that older adults rated the severity of reported stressors as lower than younger adults, while objective raters judged stressor severity equally for events reported by older and younger adults, respectively. With regard to the present study, the distinction between stressor events, non-stressor events, and nonevents is important because we investigated age differences in proactive coping after nonevents. If there are age differences in the thresholds for labeling an event a stressor, nonevents might be confounded by non-stressor events, that is, by potentially negative events that did not surpass the threshold

for being appraised as a stressor. Therefore, we assessed non-stressor events in addition to stressor events to separate them from nonevents.

The Present Study

We investigated age differences in proactive coping employed in people's daily lives. Based on SST (Carstensen et al., 1999) and SAVI (Charles, 2010) we predicted that older age would be positively associated with active proactive coping in daily life. That is, we expected that older adults would be more likely to report using active proactive coping in cases when no potentially stressful event has occurred. Further, we investigated potential age differences in labeling an event as a stressor. Building on previous research (e.g., Almeida & Horn, 2004) we expected that older adults would appraise potentially negative events as less negative. Finally, we investigated potential age-related differences in stressor-appraisal thresholds by examining if the association of event appraisal with labeling the event as stressor was moderated by age.

Method

Participants

Two-hundred and fourteen participants were recruited for this study. Recruitment advertisements targeted adults between 20 and 80 years for a study investigating daily experiences. Inclusion criteria for the study were: (1) age between 20 and 80 years, (2) fluent in English, (3) having a daily waking schedule after 4 a.m. but before 11 a.m., (4) physical ability to operate a palm top (small handheld) computer, and (5) lack of major cognitive impairment. During a screening on the telephone, prospective participants were informed about the study objectives and inclusion criteria. Thirty-four potential participants either did not meet all criteria or were no longer interested in the study; two participants were excluded for the present study since they did not provide information on relevant study variables. Mean age of the final sample ($N = 178$) was 49.5 years ($SD = 17.1$). Age was evenly distributed

across the six age decades with 15.2% to 17.4% of participants in each decade; 51% of the participants were female. Participants were heterogeneous with regard to educational background: 58 participants (32.6%) reported a high school degree as their highest degree obtained. Twenty-nine participants held a Bachelor's degree (16.3%), 17 a Master's degree or Doctorate (9.6%). Twenty-three participants (12.9%) had no degree, and 51 indicated other / GED (28.7%). One-hundred two participants (57.3%) identified themselves as white/Caucasian, 57 as black (32.0%), and six as Hispanic (3.4%). Thirteen participants indicated 'other ethnicity' (7.3%).

Procedure

The present study employed a measurement burst design (Nesselroade, 1991; Sliwinski, 2008). These designs consist of intensive longitudinal measurement bursts (such as ecological momentary assessments; EMA) that are repeated several times with the same individuals. By that, short term fluctuations (moment-to-moment) can be separated from long-term fluctuations (across weeks, months or years) and stable inter-individual differences. The present study consisted of three EMA bursts, separated by approximately 9 months each. During each EMA, participants were instructed to carry the study mobile device (Palm Tungsten E2) with them for seven consecutive days. On each of the seven days of a burst, participants were prompted five times during the day, asking to fill in a questionnaire. Prompts were delivered at semi-randomized time points, spaced approximately 2-3 hours apart. The EMA phase was repeated for a total of three times, yielding potentially 18,690 beeps for the present analyses (178 participants x 3 bursts x 7 days x 5 beeps); compliance at the three bursts was high with 92.1% (burst 1), 94.0% (burst 2), and 93.1% (burst 3) of the prompted questionnaires responded to, respectively. See Neubauer et al. (2018) and Mogle, Muñoz, Hill, Smyth, and Sliwinski (2017) for additional information on the study procedure.

Measurements

Event occurrence. Both stressor events and non-stressor events were assessed in the present study. Stressor occurrence was operationalized by asking participants whether anything stressful had occurred since the last measurement. If so, they reported stressor content type by selecting from the following list: argument/disagreement/conflict; work/school related event; home related event; health or accident; event that happened to others; other stressor (Almeida, 2005). Perceived severity of the event was assessed by asking: “How unpleasant was this _____ [name of specific event] when it happened?” Responses were given on a scale ranging from 1 (not at all) to 7 (extremely).

At occasions when participants indicated that nothing stressful had occurred since the last assessment, they were next presented with a list of five events similar to the stressor events and asked, which of these events had occurred since the last assessment even if they did not find them stressful: argument/disagreement/conflict; difficulties involving work/school; difficulties at home; health issue or accident; negative event to others (the “other” category was omitted as nonsensical in this context). As with stressor events, if any of these events had happened, participants were similarly prompted to report how unpleasant they had perceived this event when it happened from 1 (not at all) to 7 (extremely). Variance decomposition using empty four-level models showed that 21.4% of the total variance in event severity could be attributed to differences between participants, 8.3% to variations from burst-to-burst, 13.8% to day-to-day fluctuations, and 56.5% to variation within days. Across all participants and observations, stressor events were rated as more unpleasant ($M = 4.76$, $SD = 1.37$) than non-stressor events ($M = 4.25$, $SD = 1.42$), $p < .001$.

Proactive coping. At moments when participants reported neither a stressor event nor a non-stressor event, they were asked why they thought that nothing stressful had happened to them. Participants could choose between five options: (1) “stressful things usually don’t happen to me”; (2) “I avoided stressful situations”; (3) “I handled situations before they

became stressful”; (4) “I was lucky”; (5) “other reason”. Based on Aspinwall and Taylor (1997) we considered only the third option as indicator for *active* proactive coping.

To sum up, at each measurement occasion, participants either reported an event (“stressor” or “non-stressor”) or no event (“nonevent”). If an event was reported, participants also indicated the severity of the event. At all nonevent occasions, participants indicated why they thought that nothing stressful had happened to them; five reasons were presented, of which one was proactive coping. Descriptive statistics of all study variables on the person level can be found in Table 1.

Data Analysis

We used multilevel models (Raudenbush & Bryk, 2002) to account for the nested data structure in the present study. Specifically, responses on each beep (Level 1) were considered nested within the respective day (Level 2), and days were nested within bursts (Level 3), which were nested within participants (Level 4). A two part model with a mixture distribution (Baldwin, Fellingham, & Baldwin, 2016) was used to simultaneously estimate the effects of age on event occurrence and perceived event severity. For the classification of an event as stressor versus non-stressor event, a logistic multilevel model was estimated as was for the prediction of the odds of reporting proactive coping as reason for no stressor occurrence (see Supplemental Material for a detailed description). Multilevel models were estimated using `proc glimmix` in SAS, all other analyses were done with R (version 3.2.2).

Results

Event Occurrence and Severity

In the first model, we simultaneously predicted event occurrence and rated event severity by age. Results (see Table 2) showed that age was not associated with event occurrence, $b = .125, p = .207$. The odds for event occurrence decreased across bursts, $b = -.155, p = .003$, within bursts, $b = -.090, p < .001$, and within days, $b = -.040, p = .016$. That is,

participants were less likely to report events at a later burst, at the end of each burst, and at the end of each day. As expected, event severity was negatively associated with age, $b = -.309$, $p < .001$. Event severity also decreased across bursts, $b = -.149$, $p = .001$, but slightly increased within bursts, $b = .032$, $p = .012$. To sum up, older adults were not less likely to report an event, but they rated the reported events as less unpleasant.

Stressor versus Non-Stressor Events

As reported in the previous section, there were no age differences in the odds of reporting an event, but there might be age differences in the labeling of these events as stressors versus not. To that end, we predicted type of event (stressor vs. non-stressor) from rated event severity and age (including the covariates gender, burst, day, and beep). In the first model (see Table 3, left column) rated severity was centered on the person mean to investigate the pure within-person effect of stressor severity on the odds of reporting the event as a stressor (Wang & Maxwell, 2015). As expected, event severity, $b = .349$, $p < .001$, was associated with the odds of reporting an event as a stressor: Higher unpleasantness of the event was associated with higher odds of reporting the event as a stressor compared to a non-stressor event, odds ratio = 1.42. Age was not associated with the labeling of the event, $b = -.056$, $p = .630$. In a second model, we tested the possibility of age related changes in the thresholds for labeling an event as a stressor. To that end, event severity was centered on the grand mean, and the interaction of this variable with age was entered into the model. Age differences in thresholds for labeling an event as stressor would manifest in an age x severity interaction in this model which assesses whether the effect of event severity on the odds for labeling the event as a stressor changes with advancing age. In this model, the effect of event severity remained significant, $b = .338$, $p < .001$, and the effect of age remained not significant, $b = .056$, $p = .637$. The age x severity interaction was not significant, providing no evidence for age differences in thresholds, $b = .022$, $p = .625$.

Proactive Coping

In the last step, we tested our hypothesis that older adults should report more active proactive coping in situations when no event (stressor or non-stressor) occurred. To that end, a logistic multilevel model was conducted with the dependent variable indicating whether or not proactive coping was chosen as the reason for no stressor occurrence. Results (Table 3, right column) showed, that older adults were more likely to endorse that they handled the situation before it became stressful, $b = .451$, $p = .003$, odds ratio = 1.57. That is, study participants one standard deviation older than the average (67 years versus 50 years) were more than 50% more likely to report proactive coping as the reason for no stressor occurrence in the last 2-3 hours before the assessment. Results also showed a decrease in the odds of reporting proactive coping across bursts, $b = -.308$, $p = .012$.

Ancillary Analyses

The above analyses showed decreases in the odds of reporting an event, in event severity, and in the odds of reporting proactive coping across bursts. We further examined if this within-person change across the 18 months study period was moderated by age. None of the age x burst interactions was significant, $p > .104$ for all.

To explore whether the age differences reported in the previous section were specific to *active* proactive coping, we repeated the analyses using the four other reasons for no stressor occurrence as dichotomous dependent variables in four separate logistic multilevel models. There were no effects of age on endorsing the reasons “I avoided stressful situations”, $b = -.222$, $p = .252$, “Stressful things usually don’t happen to me”, $b = .501$, $p = .079$, “I was lucky”, $b = -.143$, $p = .497$, or “Other reasons”, $b = -.261$, $p = .262$, respectively. There were no main effects for burst or age x burst interaction effects for any of these four variables, $p > .468$ for all.

In the previous models, only linear age effects were investigated. To test whether non-linear age effects might be present, we also included quadratic age effects in the models predicting event occurrence, event severity, event type (stressor or non-stressor), and proactive coping. No significant quadratic age effects emerged, $p > .089$ for all. Using categorical age groups (20-35 years; 36-50 years; 51-62 years; 63-78 years) instead of linear age as predictor in the models did not alter the results either: There were no effects of age group on event occurrence or event type, $p > .386$, whereas the age group effects on event severity, $p < .001$, and reported use of proactive coping, $p = .046$, remained significant.

Discussion

SST (Carstensen et al., 1999) and SAVI (Charles, 2010) perceive older adults as proactive agents who not only have high motivation to prevent minor hassles in their daily lives, but also a life-long expertise in managing their environment to do so. Based on these accounts, we predicted that older adults would be more likely to engage in active proactive coping with minor hassles in their daily lives. Our results provided support for this hypothesis: At occasions when no potentially stressful event occurred, older adults were more likely to report that they had handled situations before they became stressful than younger adults. Preventing stressful situations before they occur can be particularly important for older adults: Although previous life-experiences aid them in effectively coping with stressors, age-associated decrements in the ability of physiological regulation make them vulnerable to highly demanding stressors (Charles, 2010). For example, Wrzus, Muller, Wagner, Lindenberger, and Riediger (2013) reported data showing that older adults responded more strongly to complex stressors than younger adults, highlighting the boundary conditions of age-associated strengths in affect regulation. Coping strategies that prevent older adults from being exposed to highly demanding situations which overpower their regulatory capacities might therefore be particularly adaptive.

It should be noted that we found no evidence for age differences in any of the other reasons study participants could choose from when asked why they think that nothing stressful had happened to them. In particular, there were no age differences in self-reported stressor avoidance. Age-associated increases in the avoidance of stressful interpersonal situations have been discussed as a central mechanism for the reduced number of arguments reported by older adults (Blanchard-Fields, 2007), and there has been some evidence supporting this claim (e.g., Birditt & Fingerman, 2005). Differences in the study designs might partially explain these diverging results. Specifically, most studies on conflict avoidance used either daily-diary designs (Birditt et al., 2005), behavioral vignettes (Blanchard-Fields et al., 2007; Oberhauser et al., 2017), or observational designs involving conversations about conflicts in dyads (Fingerman, 1998; Holley, Haase, & Levenson, 2013). Behavioral choices for hypothetical scenarios such as vignettes are influenced by semantic knowledge (Robinson & Clore, 2002), that is, by participants' impression of how they think they should act (see also Conner & Barrett, 2012). Similarly, interactions under surveillance of researchers could also diverge from real-life interactions due to concerns of self-presentation. The present study aimed at tapping into proactive coping in a temporally more fine-grained way, investigating proactive coping in our study participants' everyday lives. Most notably, we targeted proactive coping in situations when no potentially stressful event had occurred, whereas previous studies investigated reactive coping after a stressor had already started. Nevertheless, the type of stressor might also be an important factor in explaining the findings (i.e., age differences in avoidance of inter-personal versus other stressors). Because we do not have information on what specific situations were avoided, we cannot rule out the possibility that avoidance of specifically inter-personal stressors would be associated with age – however, we found no evidence for age differences in the avoidance of stressful situations in general.

We also investigated if the previously found age differences in the amount of daily stressors reported (e.g., Almeida, 2005; Charles et al., 2010) could be due to age differences in the thresholds of reporting a negative event as a stressor. To that end, we assessed both stressors and similar events that were not appraised as stressors by our study participants, as well as the rated severity of both event types. Event severity was the most important predictor for reporting an event as stressor (vs. a non-stressor event): Events that were rated as more unpleasant had a higher probability of being labeled as a stressor. Importantly, age did not moderate the effect of reported event severity on the labeling of this event: Younger and older adults had the same probability of labeling an event with the same severity as stressor versus non-stressor. Hence, we found no evidence for age differences in the thresholds for labeling an event as a stressor. We note that in our study, there were no age differences in the reports of events (stressor or non-stressor). The discrepancy to previous studies which found a reduction in the number of stressors reported with advancing age (e.g., Almeida, 2005; Charles et al., 2010) might be due to differences in the study design (EMA vs. daily diary) or the inclusion of non-stressor events in the assessment which might have altered response styles in comparison to previous studies. These considerations remain, however, speculative and need to be targeted by future research.

Our results also showed that older age was associated with lower severity ratings. That is, older adults appraised both stressor events and non-stressor events as less unpleasant than younger adults. Less severe stress appraisals with advancing age have been reported in previous studies (e.g., Boeninger, Shiraishi, Aldwin, & Spiro, 2009) and are in line with the coping, appraisal, and resilience in aging model (CARA; Aldwin & Igarashi, 2012; Aldwin & Igarashi, 2016). According to this model, stress appraisals, coping strategies, and coping efficacy are the main processes driving resilience to adversity, and they dynamically interact with resources on the sociocultural, community, and individual level. Although CARA does

not explicitly target proactive coping, our findings, together with current conceptual and empirical work (Neupert et al., 2018) suggest that adding coping processes before stressor occurrence to existing coping and appraisal models could help to further our understanding of stress processes and age differences therein.

Limitations

The present study comes with a number of limitations. First, the focus of the present study was on age differences in proactive coping across a large part of the human lifespan, operationalized as cross-sectional age differences. These cross-sectional effects do not necessarily speak to age-related changes, but they are a combination of developmental effects and cohort effects. In fact, the longitudinal results across bursts go in the opposite direction of the cross-sectional age effects for proactive coping. Future studies using longer inter-burst intervals need to further explore whether these within-person changes are driven by developmental changes or measurements reactivity. Second, proactive coping was assessed in a very generic way as handling situations before they became stressful. No information on specific behavioral/cognitive strategies employed was available in the present data. It is also unclear what exactly “handling the situation” meant for the study participants. Age differences in how this response was perceived might partly explain age differences in the reporting of this strategy. Third, Ouwehand et al. (2006) differentiated four types of proactive coping (active coping; planning; suppression of competing activities; seeking social support), and the possibility to apply a specific proactive coping strategy depends on person- and situation-specific resources that can in themselves exhibit age related change. For example, planning requires sufficient cognitive functioning which might be limited with advancing age, in particular in highly demanding situations (Sliwinski, Smyth, Hofer, & Stawski, 2006). Fourth, situational variables can be expected to moderate the age effects on proactive coping. For example, controllability of the situation could be an important moderator: Older adults’

life-long experience in affect regulation should help them to decide which battles to pick (Birditt & Fingerman, 2005). According to this logic, active proactive coping should show a positive association with age for controllable stressors, but avoidance might be a better choice for uncontrollable stressors, yielding a positive association of age with avoidance for uncontrollable stressors. That is, in addition to the specific type of stressor (interpersonal versus other), stressor controllability might be an important factor in determining whether age differences in avoidance are observed. Future research should examine differential age effects on specific proactive coping strategies, as well as characteristics of individuals and situations that might predict the choice of these strategies. Fifth, our study design did not allow for testing whether use of proactive coping is associated with experiencing fewer stressors. On the between-person level, participants who reported proactive coping on more occasions at which no stressful event occurred also reported more potentially stressful events; this correlation was primarily driven by non-stressor events, which could suggest that proactive coping might turn potentially stressful events into non-stressful events. However, as proactive coping was only assessed at occasions without stressors, this correlation cannot be interpreted as evidence for higher non-stressor events exposure as a function of more proactive coping (or vice versa). Future studies need to assess proactive coping also in situations when a stressor occurred in order to address the efficacy of proactive coping. Furthermore, future studies could investigate if the use of proactive coping longitudinally diminishes the occurrence of stressors. Investigating such lead-lag effects across measurement bursts could further our understanding of potential positive long-term effects of proactive coping.

Conclusions

Older and younger adults experience minor hassles in their daily lives. Findings from the present study showed that the occurrence of potentially stressful events in people's daily lives was not associated with age. Older adults did, however, appear to perceive these events

as less unpleasant, and the unpleasantness of the event was the main predictor for whether or not it was reported as a stressor. Our results further showed a positive association of age with self-reported active proactive coping, supporting central claims of SST (Carstensen et al., 1999), and SAVI (Charles, 2010), whereas we found no evidence for age differences in stressor avoidance.

Funding

This work was supported by the National Institute on Aging (grant number R01-AG026728).

References

- Aldwin, C. M., & Igarashi, H. (2016). Coping, optimal aging, and resilience in a sociocultural context. In V. L. Bengtson, R. A. Settersten, B. K. Kennedy, N. Morrow-Howell, & J. Smith (Eds.), *Handbook of theories of aging* (pp. 551–576). New York, NY: Springer Publishing Company, LLC.
- Aldwin, C. M., Sutton, K. J., Chiara, G., & Spiro, A. (1996). Age Differences in Stress, Coping, and Appraisal: Findings from the Normative Aging Study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *51*, 179-188.
<https://doi.org/10.1093/geronb/51B.4.P179>
- Aldwin, C., & Igarashi, H. (2012). An ecological model of resilience in late life. *Annual Review of Gerontology and Geriatrics*, *32*, 115–130. <https://doi.org/10.1891/0198-8794.32.115>
- Aldwin, C. M., Jeong, Y.-J., Igarashi, H., & Spiro, A. (2014). Do hassles and uplifts change with age? Longitudinal findings from the VA normative aging study. *Psychology and Aging*, *29*, 57–71. <https://doi.org/10.1037/a0035042>
- Almeida, D. M. (2005). Resilience and vulnerability to daily stressors assessed via diary methods. *Current Directions in Psychological Science*, *14*, 64–68.
<https://doi.org/10.1111/j.0963-7214.2005.00336.x>
- Almeida, D. M., & Horn, M. C. (2004). Is daily life more stressful during middle adulthood? In O. G. Brim, C. D. Ryff, & R. C. Kessler (Eds.), *How healthy are we? A national study of well-being at midlife* (pp. 425–451). Chicago, IL: University of Chicago Press.
- Almeida, D. M., Wethington, E., & Kessler, R. C. (2002). The Daily Inventory of Stressful Events. *Assessment*, *9*, 41–55. <https://doi.org/10.1177/1073191102091006>

- Aspinwall, L. G., & Taylor, S. E. (1997). A stitch in time: Self-regulation and proactive coping. *Psychological Bulletin*, *121*, 417–436.
- Baldwin, S. A., Fellingham, G. W., & Baldwin, A. S. (2016). Statistical models for multilevel skewed physical activity data in health research and behavioral medicine. *Health psychology*, *35*, 552–562. <https://doi.org/10.1037/hea0000292>
- Birditt, K. S., & Fingerman, K. L. (2005). Do we get better at picking our battles? Age group differences in descriptions of behavioral reactions to interpersonal tensions. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *60*, 121-128. <https://doi.org/10.1093/geronb/60.3.P121>
- Birditt, K. S., Fingerman, K. L., & Almeida, D. M. (2005). Age differences in exposure and reactions to interpersonal tensions: a daily diary study. *Psychology and Aging*, *20*, 330–340. <https://doi.org/10.1037/0882-7974.20.2.330>
- Blanchard-Fields, F., Mienaltowski, A., & Seay, R. B. (2007). Age differences in everyday problem-solving effectiveness: Older adults select more effective strategies for interpersonal problems. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *62*, 61-64. <https://doi.org/10.1093/geronb/62.1.P61>
- Blanchard-Fields, F. (2007). Everyday problem solving and emotion. *Current Directions in Psychological Science*, *16*, 26–31. <https://doi.org/10.1111/j.1467-8721.2007.00469.x>
- Boeninger, D. K., Shiraishi, R. W., Aldwin, C. M., & Spiro, A. (2009). Why do older men report low stress ratings? Findings from the Veterans Affairs Normative Aging Study. *International Journal of Aging & Human Development*, *68*, 149–170. <https://doi.org/10.2190/AG.68.2.c>

- Brennan, P. L., Holland, J. M., Schutte, K. K., & Moos, R. H. (2012). Coping trajectories in later life: a 20-year predictive study. *Aging & Mental Health, 16*, 305–316.
<https://doi.org/10.1080/13607863.2011.628975>
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist, 54*, 165–181.
<https://doi.org/10.1037/0003-066X.54.3.165>
- Charles, S. T. (2010). Strength and vulnerability integration: a model of emotional well-being across adulthood. *Psychological Bulletin, 136*, 1068–1091.
<https://doi.org/10.1037/a0021232>
- Charles, S. T., Carstensen, L. L., & McFall, R. M. (2001). Problem-solving in the nursing home environment: Age and experience differences in emotional reactions and responses. *Journal of Clinical Geropsychology, 7*, 319–330.
<https://doi.org/10.1023/A:1011352326374>
- Charles, S. T., Luong, G., Almeida, D. M., Ryff, C., Sturm, M., & Love, G. (2010). Fewer ups and downs: daily stressors mediate age differences in negative affect. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 65*, 279–286.
<https://doi.org/10.1093/geronb/gbq002>
- Conner, T. S., & Barrett, L. F. (2012). Trends in ambulatory self-report: The role of momentary experience in psychosomatic medicine. *Psychosomatic Medicine, 74*, 327–337.
<https://doi.org/10.1097/PSY.0b013e3182546f18>
- Fingerman, K. L. (1998). Tight lips? Aging mothers' and adult daughters' responses to interpersonal tensions in their relationships. *Personal Relationships, 5*, 121–138.
<https://doi.org/10.1111/j.1475-6811.1998.tb00163.x>

- Holley, S. R., Haase, C. M., & Levenson, R. W. (2013). Age-related changes in demand–withdraw communication behaviors. *Journal of Marriage and the Family*, *75*, 822–836.
- Hyun, J., Sliwinski, M. J., & Smyth, J. M. (2018). Waking up on the wrong side of the bed: The effects of morning stress anticipation on working memory in daily life. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*. Advance online publication. <https://doi.org/10.1093/geronb/gby042>
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company.
- Mogle, J., Muñoz, E., Hill, N. L., Smyth, J. M., & Sliwinski, M. J. (2017). Daily memory lapses in adults: Characterization and influence on affect. *The Journals of Gerontology: Series B*. Advance online publication. <https://doi.org/10.1093/geronb/gbx012>
- Nesselroade, J. R. (1991). The warp and woof of the developmental fabric. In R. Downs, L. Liben, & D. S. Palermo (Eds.), *Visions of aesthetics, the environment, and development: The legacy of Joachim F. Wohwill* (pp. 213–240). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Neubauer, A. B., Smyth, J. M., & Sliwinski, M. J. (2018). When you see it coming: Stressor anticipation modulates stress effects on negative affect. *Emotion*, *18*, 342–354. <https://doi.org/10.1037/emo0000381>
- Neupert, S. D., & Bellingtier, J. A. (2018). Daily stressor forecasts and anticipatory coping: Age differences in dynamic, domain-specific processes. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*. Advance online publication. <https://doi.org/10.1093/geronb/gby043>

- Neupert, S. D., Neubauer, A. B., Scott, S. B., Hyun, J., & Sliwinski, M. J. (2018). *Back to the future: Examining age differences in processes before stressor exposure*. Manuscript submitted for publication.
- Oberhauser, L., Neubauer, A. B., & Kessler, E.-M. (2017). Conflict avoidance in old age. The role of anticipated loneliness. *GeroPsych, 30*, 61-70. <https://doi.org/10.1024/1662-9647/a000168>
- Ouwehand, C., Ridder, D. T. D. de, & Bensing, J. M. (2006). Situational aspects are more important in shaping proactive coping behaviour than individual characteristics: A vignette study among adults preparing for ageing. *Psychology & Health, 21*, 809–825. <https://doi.org/10.1080/14768320500537639>
- Ouwehand, C., Ridder, D. T.D. de, & Bensing, J. M. (2008). Individual differences in the use of proactive coping strategies by middle-aged and older adults. *Personality and Individual Differences, 45*, 28–33. <https://doi.org/10.1016/j.paid.2008.02.013>
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks: Sage Publications.
- Robinson, M. D., & Clore, G. L. (2002). Belief and feeling: Evidence for an accessibility model of emotional self-report. *Psychological Bulletin, 128*, 934–960.
- Scott, S. B., Kim, J., Smyth, J. M., Almeida, D. M., & Sliwinski, M. J. (2018). *Additive effects of forecasted and reported stressors on negative affect*. Manuscript submitted for publication.
- Sliwinski, M. J. (2008). Measurement-burst designs for social health research. *Social and Personality Psychology Compass, 2*, 245–261. <https://doi.org/10.1111/j.1751-9004.2007.00043.x>

Sliwinski, M. J., Smyth, J. M., Hofer, S. M., & Stawski, R. S. (2006). Intraindividual coupling of daily stress and cognition. *Psychology and Aging, 21*, 545–557.

<https://doi.org/10.1037/0882-7974.21.3.545>

Stawski, R. S., Sliwinski, M. J., Almeida, D. M., & Smyth, J. M. (2008). Reported exposure and emotional reactivity to daily stressors: The roles of adult age and global perceived stress. *Psychology and Aging, 23*, 52–61. <https://doi.org/10.1037/0882-7974.23.1.52>

Wang, L., & Maxwell, S. E. (2015). On disaggregating between-person and within-person effects with longitudinal data using multilevel models. *Psychological Methods, 20*, 63–83.

<https://doi.org/10.1037/met0000030>

Whitty, M. T. (2003). Coping and defending: Age differences in maturity of defence mechanisms and coping strategies. *Aging & Mental Health, 7*, 123–132.

<https://doi.org/10.1080/1360786031000072277>

Wrzus, C., Muller, V., Wagner, G. G., Lindenberger, U., & Riediger, M. (2013). Affective and cardiovascular responding to unpleasant events from adolescence to old age: complexity of events matters. *Developmental Psychology, 49*, 384–397.

<https://doi.org/10.1037/a0028325>

Table 1

Descriptive Statistics.

			Correlations										
	<i>Mean</i>	Range	2	3	4	5	6	7	8	9	10	11	
	(<i>SD</i>)												
1	Age at burst 1	49.5 (17.1)	20 - 79	-.02	.04	.11	.08	-.34***	.11	-.08	.19*	-.04	-.09
2	Gender ^a	.51 (.50)	0 - 1		.08	-.16*	.00	.04	-.08	.04	.00	.12	-.05
3	Proportion of beeps with stressor event reported	.14 (.15)	0 - .91			.12	.90***	.05	-.11	-.11	.14	-.02	.11
4	Proportion of beeps with non-stressor event reported	.06 (.08)	0 - .37				.53***	-.06	-.11	-.06	.22**	-.05	.07

PROACTIVE COPING

28

5	Proportion of beeps with any event reported	.20 (.18)	0 – .99	.02	-.14	-.12	.21**	-.03	.12
6	Mean unpleasantness of the event	4.65 (.87)	1 – 7		-.20**	.02	-.04	.14	.07
7	Mean endorsement “stressful things usually don’t happen to me”	.15 (.30)	0 – 1			-.23**	-.10	-.26***	-.39***
8	Mean endorsement “I avoided stressful situations”	.20 (.28)	0 – 1				-.04	-.21**	-.38***
9	Mean endorsement “I handled situations before they became stressful”	.10 (.18)	0 – 1					-.13	-.28***

Table 2

Event Occurrence and Event Severity as a Function of Age.

	Estimate	Standard Error
	Fixed Effects	
Event occurrence		
Intercept	-1.33***	.155
Gender ^a	.088	.197
Burst	-.155**	.053
Day	-.090***	.014
Beep	-.040*	.017
Age	.125	.099
Event Severity		
Intercept	4.49***	.103
Gender ^a	.059	.118
Burst	-.149**	.045
Day	.032*	.013
Beep	.005	.015
Age	-.309***	.060
	Random Effects (Variances)	
Event occurrence		

Intercept (Level 4; across persons)	1.36	.194
Intercept (Level 3; across bursts)	.302	.057
Intercept (Level 2; across days)	.418	.052
Event Severity		
Intercept (Level 4; across persons)	.331	.064
Intercept (Level 3; across bursts)	.158	.041
Intercept (Level 2; across days)	.265	.044
Residual	1.10	.041
Covariances (Event occurrence, event severity)		
Intercept (Level 4; across persons)	.056	.087
Intercept (Level 3; across bursts)	.073	.036
Intercept (Level 2; across days)	.144	.042

Note. Table depicts point estimates and associated standard errors. Age was z-transformed prior to the analysis, burst was centered on the first burst, day was centered on the first day of each burst, and beep was centered on the first beep of each day. Number of participants = 178; total number of observations = 16,503.

^a0=male; 1=female. * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 3

Multilevel Logistic Regressions.

	Stressor vs. Non- Stressor	Proactive Coping
Fixed Effects		
Intercept	.901***(.206)	-3.13*** (.252)
Gender ^a	.521* (.230)	.204 (.300)
Burst	-.036 (.095)	-.308* (.123)
Day	.001 (.026)	-.041 (.021)
Beep	-.032 (.037)	.028 (.029)
Age	-.056 (.117)	.451** (.153)
Event Severity	.349*** (.045)	-
Random Effects (Variances)		
Intercept (Level 3; across persons)	1.15 (.247)	2.07 (.430)
Intercept (Level 2; across bursts)	.660 (.161)	1.99 (.286)

Note. Table depicts point estimates (standard errors in brackets). Number of participants = 167 (Stressor vs. Non-Stressor) / 178 (Proactive Coping); total number of observations = 2,783 (Stressor vs. Non-Stressor) / 10,824 (Proactive Coping).

^a0=male; 1= female. * $p < .05$; ** $p < .01$; *** $p < .001$.