ABSTRACT

DAVIS, AGNES ANN. The Within-Person Coupling of Daily Control Beliefs and Anticipatory Coping with Stressors among Young-Old and Old-Old Adults. (Under the direction of Dr. Shevaun D. Neupert.)

In the study of coping with stressors, anticipatory coping, wherein individuals attempt to look ahead to future stressors and perform coping behaviors ahead of the stressful situation, may be very beneficial, in that it allows individuals to minimize or eliminate the impact of stressors before they occur. Control beliefs may be related to the appraisal of when different forms of anticipatory coping are chosen for different stressful situations. To best examine this question, changing daily stress, coping, and control must be examined, because coping behaviors and control beliefs likely vary by daily context. The experiences of older adults must be examined within this context, as declining cognitive resources, especially among the oldest old adults, may lead to a decrease in range or effectiveness of coping behaviors. This study examined the relationship between anticipatory coping, control beliefs, and stress, and the differences in this relationship between young-old and old-old adults. For all older adults, daily control beliefs and stressor control beliefs were significantly likely to decrease as perceived likelihood of a future stressor increased. Young-old adults performed significantly less Problem Analysis coping on days with high daily control beliefs, and old-old adults performed significantly more Plan Rehearsal coping on days with high daily control beliefs. On days with low levels of previous-day Stagnant Deliberation coping performed, old-old adults had significantly higher stressor control beliefs. On days with high levels of previous-day Stagnant Deliberation coping performed, young-old adults had significantly higher stressor control beliefs. Implications, study limitations, and directions for future research are discussed.
The Within-Person Coupling of Daily Control Beliefs and Anticipatory Coping with Stressors among Young-Old and Old-Old Adults

by

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DEDICATION

This thesis is dedicated to my mother, Dr. Michelle Gall, for providing the greatest emotional and instrumental support during my undergraduate and graduate career, and always being there to encourage me. To Dr. Michael Viana, even though our fields of study are very different, your advice and encouragement have helped me through the process, which you understand very well. To my brothers, Jboy and Eric, for being constantly present sounding boards for ideas. To Drs. John and Michael Ferguson, for their valuable words of wisdom when I was entering my graduate career. Lastly, to all of my students at the NBS Judo dojo, your encouragement and belief in me is humbling, and you have my utmost appreciation.
BIOGRAPHY

Agnes Ann Davis attended North Carolina State University, and graduated with a Bachelor of Arts in Psychology in 2009. She entered the Lifespan Developmental Psychology doctoral program under the instruction of Dr. Shevaun Neupert in 2011.
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INTRODUCTION

The impact of major life events is frequently analyzed in psychological research (Aldwin, 2007). However, the cumulative effect of minor daily hassles and stressors has a significant impact on individuals’ well-being (Almeida, 2005) and deserves attention as well. Daily stressors can include what most people would consider expected normative stress, such as arguments, or unexpected stress that is still small in scale, such as a sudden minor illness. Despite the relatively minor scale of these daily stressors, these events can still impact functioning (Neupert, Almeida, Mroczek, & Spiro, 2006). Individuals’ effortful behaviors to cope with these events can be beneficial to their responses (or reactivity) to the stressors.

Previous work on coping with stress has either focused on the trait perspective or the process perspective of coping (Aldwin, 2007). The trait perspective of coping examines coping on a global level, and assumes that an individual will use the same coping mechanisms for all stressors. Some studies of coping even measure personality, and then attempt to tie coping behaviors into these traits, rather than directly measuring what individuals do in stressful situations (Haan, 1977).

The process approach examines coping on a situation level, and assumes that coping is a dynamic process that changes by situation. Coping behaviors are consciously selected by the individual to meet the demands of the stressful situation (Pearlin & Schooler, 1978). While both of these perspectives support between-person differences in coping, only the process perspective takes into account the within-person differences that can occur in coping processes.
Coping behaviors are consciously selected by the individual, based on their beliefs about the demands of a stressful situation. Specific coping behaviors that share similar qualities can be collapsed into ‘forms’ of coping, so that the constructs can be better understood. However, these are not stable stylistic differences in coping that persist as between-person differences (Cohen & Lazarus, 1973).

Lazarus and Folkman (1984) described the stress and coping process as a relationship between the person and environment, which contains an individual-level cognitive appraisal of the situation. By this definition, stress and coping are person-specific and situation-specific processes, which are dynamic across people and over time. A stressor must be identified and then appraised to be stressful. Once the stressor has been appraised, then the coping behavior can be consciously selected. Lazarus (1991) referred to this difference in appraisal of a stressor as primary appraisals, and appraisal of coping options as secondary appraisals. Both of these are considered to be very cognitive, internal appraisals.

This dynamic process model of stress and coping has primarily been tested on reactive coping, or coping behaviors that are performed after a stressor has already occurred (Aspinwall & Taylor, 1997; Lazarus & Folkman, 1984). There is notably less literature that examines anticipatory coping, or coping behaviors that are performed in preparation for an anticipated upcoming stressor (Aspinwall & Taylor, 1997; Aspinwall, Sechrist, & Jones, 2005; Feldman & Hayes, 2005). These same processes of stressor identification, appraisal, and coping behavior in reaction to this appraisal still apply to anticipatory coping in the same
manner as they do to reactive coping. The timing of these processes is different, because they are performed ahead of the anticipated stressful event.

In situations of anticipatory coping, in particular, coping can be thought of as an attempt to take control of a situation. Trying to take control of an event that has not yet occurred can be particularly draining on cognitive resources (Aspinwall & Taylor, 1997), especially if an individual does not know what form of coping to rely on for the anticipated situation (Aldwin, 2007). However, older adults who have greater life experience than younger adults at coping with stressful events may have more effective coping patterns, which are tailored to their individual situations. High levels of anticipatory coping and adaptive strategy use to avoid stressors before they occur have been seen in samples of the oldest-old, aged 80+ (Johnson & Barrer, 1993). This strategy use is hypothesized to be related to Baltes’ (1987) model of compensation with selective optimization. Older adults, especially those in the oldest-old age, will optimize declining cognitive resources into contexts that are personally important or highly relevant. This entire model of coping in old age is contextually-based. It is hard to make sweeping generalizations about coping patterns changing into trait characteristics, because expertise is driving individual contextual coping pattern choices that can be different between each individual.

While older adults’ expertise contributes to more effective coping patterns with stress, when those coping efforts fail, older adults are prone to higher reactivity to stressors (McEwen & Sapolsky, 1995). However, this increased reactivity is commonly found in laboratory-based stressor studies, rather than naturalistic studies, where older adults are
coping with stressors in a real life context. A long-standing critique of laboratory-based stress research is that controllability of a laboratory-based stressor event is severely decreased in comparison to stressors that occur in real life. In addition, the possible range of responses to stress may be much more limited inside of a laboratory than in real life (Wortman et al., 1980). For example, coping behaviors that would allow the individual to avoid the stressful situation mostly cannot be employed in most laboratory-based experiments, short of withdrawing from the study entirely. If controllability, or individuals’ beliefs about their controllability of a situation are driving stress responses and coping behaviors (Lazarus & Folkman, 1984), then findings from laboratory studies lack generalizability to natural stress reactions. Thooits (2006) also hypothesized that controllability or perceived agency would drive self-selection effects of stressful situations and would aid in the avoidance of anticipated events, lowering overall stress by lowering exposure.

Therefore, life context must be taken into account in order to get the best picture of stress and coping behaviors. Stress and coping must be analyzed across a range of contexts and over time. In order to better examine the variability in these constructs, the current study used a daily diary design to include a within-person perspective of these constructs. This design allows for specific instances of coping to be tied to specific stressors to add a greater sense of context to this relationship.

The question of reactivity to stressors is closely tied to individual feelings of control (Neupert, Almeida, & Charles, 2007). Control beliefs enter the stress and coping process at
the appraisal stage (Lazarus & Folkman, 1984). Beliefs about controllability of various aspects of a stressful situation influence appraisal of that stressor, and can affect the individual’s choices of level and form of coping performed. Greater feelings of primary control are related to lower reactivity to stress (Ong, Bergman, & Bisconti, 2005). If control is a part of coping with stress, then control can be seen to have a buffering effect on stress reactivity, so that in situations where people believe they are more in control of their lives, they will retain those feelings of control even if there is a mismatch between perceived control and actual controllability of the event. Perceived belief of control is the internal characteristic that will drive appraisal, and will allow the individual to select how much or what forms of effort are put into coping with the stressor (Lazarus & Folkman, 1984).

When examining stressful events, aspects of the event, such as perceived stressfulness and perceived control over the event must also be taken into account. Perceived stressfulness can have a profound effect on well-being (Lazarus, 1999). While in some studies of stress, stressors are rated objectively on stressfulness, the individual’s subjective feelings of how stressful an event was can also have a profound effect (Turner & Wheaton, 1997). Because feelings of control are being measured on a subjective level, the measurement of stressfulness must also be on a subjective level, rather than an arbitrary stressfulness scale that may not match up with the participant’s feelings of stress (Lazarus, 1999).

The question of stress, control, and coping becomes especially salient in the context of older adulthood. When the multiplicative effect of stress on age-related reactivity is considered, the experiences of older adults must be closely examined to determine effects
(McEwen & Sapolsky, 1995). While older adults have a greater amount of expertise with dealing with their personal experiences of coping with stress, when that expertise fails, and stressful events are experienced, older adults have a tendency towards increased reactivity (SAVI: Charles, 2010). However, development of coping strategies comes from life experiences in a natural context (Aldwin, Sutton, & Lachman, 1996). Effects showing increased stressor activity are most commonly found in laboratory studies, where older adults’ expertise may not be able to be utilized due to the novelty of the situation, and where feelings of personal control are lower because of the setting (Agrigoroaei et al., 2013; Neupert, Miller, & Lachman, 2006). This inability to bring expertise into play may produce similar effects to unsuccessful coping attempts when expertise failed, and therefore, reactivity may appear to be similar in these novel situations. Expertise effects would apply more in naturalistic situations, where context of stressor will inform coping strategy usage.

Differential benefits of expertise cannot be examined if older adults are treated as a homogenous group. Great amounts of variability in many constructs have been found within older adulthood, leading to the conceptualization of the Fourth Age (age 80+) (Baltes, 1997). The Fourth Age is generally characterized by further declines in any cognitive-related ability. Since coping has a cognitive component (Lazarus & Folkman, 1984) of appraisal, where an individual evaluates if a situation is possibly stressful and determines what form of coping is appropriate for the situation, this aspect of coping may decline in older adulthood. However, older adults may be well-practiced at coping behaviors, and rely on past experience to guide their choices of coping behaviors, which will lead to greater coping efficacy, provided that
the forms of coping that have proven successful in the past continue to be successful in current situations (McEwen & Sapolsky, 1995).

A core concept to the idea of stressor appraisal prior to coping is that an individual has access to multiple types of processes for coping with stress (Lazarus & Folkman, 1984). Many studies on coping have examined the effects of reactive coping (Aldwin, 2007), or coping with a stressor that has already occurred. Anticipatory coping occurs when an individual is trying to cope with an event that has yet to happen (Feldman & Hayes, 2005). By definition, since the individual is trying to anticipate a situation that may or may not actually happen, this process of coping with stress could be even more taxing to older adults’ cognition, but could be even more beneficial for stress outcomes (Feldman & Hayes, 2005). Preparations made before a stressful event occurs may allow individuals to completely avoid stressful situations altogether, rather than trying to fix the damage of stress after it has occurred (Aspinwall & Taylor, 1997). Therefore, the efficacy of this type of coping must be examined.

The Measure of Mental Anticipatory Processes (MMAP) was originally developed as a way of measuring anticipatory coping, or, as Feldman and Hayes (2005) defined it, productive and unproductive patterns of mental preparation in coping with future stressful events. Feldman and Hayes identified four factors of the MMAP. Two of these factors were considered to reflect adaptive anticipatory coping. Problem Analysis was defined as active contemplation of the causes and meaning of a future stressor. Plan Rehearsal was defined as envisioning the steps required to solve the anticipated stressor. The other two factors were
considered to reflect maladaptive anticipatory coping. Stagnant Deliberation was defined as a tendency to expend cognitive effort dwelling repetitively on a stressful situation, but not find any solutions to the problem. Outcome Fantasy was defined as a tendency to respond to problems by daydreaming or fantasizing about desired outcomes.

However, Feldman and Hayes (2005) did not take contextual effects into account in their study, and different forms of coping behaviors can have different adaptive or maladaptive qualities based on context (Aldwin, 2007; Lazarus, 1983; McEwen & Sapolsky, 1995). During the formation of the MMAP, Feldman and Hayes observed significant variance in coping strategies over time. The authors suggested that this variance could be accounted for by differences in types of events that were being prepared for. The current study took these differences into account by administering the MMAP repeatedly over days and across stressful contexts.

For the purposes of this study, forms of coping were not automatically split into adaptive and maladaptive categories; rather, coping can be seen as maladaptive in some contexts or can be allowed to be adaptive in other contexts of stressors. Lazarus (1983) argued that not all forms of coping will have the same amount of effectiveness in all situations. Some studies examining older adults’ coping with chronic health conditions have found that patterns of coping that may be objectively viewed as maladaptive, such as avoidant coping, have turned into long-engrained patterns of behavior for older adults to effectively manage a situation that they have little control over (Aldwin, 2007). Analyses looking at the MMAP on a daily basis have found that daily Stagnant Deliberation, a form of
coping that Feldman and Hayes labeled as maladaptive, led to positive cognitive outcomes on
the following day as measured by fewer memory failures (Neupert, Ennis, Ramsey, & Gall,
under third review).

The study of different forms of coping must be contextually-based, so that proper
linkages between aspects of coping and situational stress can be made, rather than
inaccurately assuming that one form of coping may be harmful to an individual or praising a
form of coping that is not actually showing any effects on stress reactivity.

Linking the defined forms of anticipatory coping to the control-oriented coping ideas
of Aspinwall (2005), it is possible that anticipatory coping can take either primary or
secondary control-oriented form. Primary control-oriented coping is any form of coping
where the goal is to change the situation to fit the individual’s needs and desires. Secondary
control-oriented coping is any form of coping where the goal is to internally change the
individual to meet the limitations of the external situation (Aspinwall, 2005). This suggests a
link between control beliefs and coping, but the relationship could take different forms. Will
individuals who believe they are more in control of their lives expend more effort on
performing coping behaviors because they are trying to take control of stress, or will they
perform fewer coping behaviors because they believe they are already in control of a stressful
situation, and do not have to do any extra work to deal with the situation (Heckhausen,
Wrosch, & Schulz, 2010)?

If control is a possible resource through which coping can buffer reactivity to
stressors, then the possible ways in which this relationship can appear in older adults will
depend on control. However, differing theories on control in older adulthood show two different possible forms that this relationship might take.

According to Dynamic Integration theory (Labouvie-Vief, 2008), older adults as they age are more likely to use secondary control strategies. This would suggest that older adults are more likely to use forms of anticipatory coping related to secondary control, or perhaps that these secondary control-related mechanisms would be more effective for the oldest-old adults.

In contrast to this idea, Heckhausen and Schulz (1993; 1995) argued that primary control remains more important across the lifespan, but availability of primary control mechanisms decrease as older adults age. This would suggest that older adults are still trying to use forms of anticipatory coping related to primary control, but that those primary control-related mechanisms are less effective for the oldest-old adults because of dwindling resources. The best way to test which possible model of control for older adults is most appropriate is to allow for heterogeneity in older adults and test for differences between young-old and old-old participants.

In previous studies on control beliefs, it has been assumed that control beliefs measured in a general sense can be applied to all situations (Heckhausen, 1995). However, studies often have shown that control beliefs can fluctuate on a daily basis (Neupert & Allaire, 2012). Feelings of domain-general overall control on a stressful day should correlate with feelings of domain-specific control of an individual stressful situation, and should have the same beneficial effect on perceived stressfulness as control over the specific situation.
(Almeida, 2005; Aspinwall, Sechrist, & Jones, 2005). Previous work on stress across different domains has shown that daily stressors in the interpersonal domain are among the most frequently endorsed, and lead to the greatest stress reactivity (Neupert, Almeida, Mroczek, & Spiro, 2006; Neupert, Almeida, & Charles, 2007).

While coping strategies can fluctuate by control beliefs, coping can also fluctuate by domain of stressful event expected or experienced (Lazarus, 1983). However, if domain is kept constant, then the aspect of the anticipated stressor that should relate most highly to the amount of anticipatory coping performed is the appraisal of likelihood of the stressor occurring (Lazarus & Folkman, 1984). Individuals will perform more coping behaviors if they appraise that a stressor is more likely to occur. Likelihood appraisal should relate to both primary and secondary control-oriented coping, with the individual either performing more active behaviors to prepare for the stressor if they believe they have primary control over the situation, or performing more passive or avoidant behaviors if they believe they can do little to change the situation.

If anticipatory coping is related to control, then daily fluctuating control beliefs should inform appraisal and anticipatory coping behaviors on the same day, when the anticipatory coping behaviors are being performed. These anticipatory coping behaviors performed in preparation for an appraised stressor on the day before the stressor occurs should then have an effect on situational stressor control beliefs measured on the day in which the stressor occurs.
The hypotheses examined in this study were:

H1: Daily control beliefs in general will be related to control beliefs about a stressful event on the same day.

H1a: This relationship will depend on age.

H1b: This relationship will depend on likelihood of anticipated stressor.

H2: Daily feelings of general control will be related to anticipatory coping behaviors performed on the same day.

H2a: This relationship will depend on age.

H2b: This relationship will differ between the types of anticipatory coping performed.

H3: Higher levels of anticipatory coping performed on the day before a stressor will be correlated to higher levels of feelings of situational stressor control on the day that the stressor occurs.

H3a: This relationship will depend on age, type of anticipatory coping performed, and likelihood of the anticipated stressor occurring.

For reference, a graphical representation of the tested hypotheses are included in Figure 1.

METHOD

Data for these analyses were taken from a larger study addressing well-being, stressors, coping, and control in older adulthood. Participants were recruited through presentations at community activity groups designed for older adults. Volunteers were asked to complete a verbal cognitive screening of the Short Blessed Test (Katzman et al., 1983).
Individuals who scored 8 or lower out of a possible 24 points were deemed to lack significant cognitive impairment, and were included in the study. After signing the informed consent forms, the participants were given the packets of daily diary questionnaires to fill out, along with pre-paid envelopes to return them to the primary investigator.

Participants were asked to complete nine diaries over nine consecutive days at home. The first packet contained baseline information, including demographic information, such as age, race, and gender, among other questionnaires. The following eight days consisted of items assessing daily stressors, anticipatory coping, and daily control beliefs. Upon completion of all packets, participants mailed them back, and were subsequently debriefed and compensated. Compensation was given in the form of gift cards; $20 was given for completion of five or more study days, or $10 was given for four or fewer days. The compliance rate was 98.2%, with 380 out of a possible 387 days completed.

Of 51 initial participants, 1 dropped out due to lack of time, and 7 were lost to follow-up. The remaining participants included 43 older adults, aged 60-96 ($M = 74.65$, $SD = 8.19$) 39 women (90.7%), and 4 men (9.3%). 22 (51.2%) were African American, 20 (46.5%) were White, and 1 (2.9%) was Asian.

MEASURES

Daily Stressful Events

Daily stressors were assessed through the Daily Inventory of Stressful Events (Almeida, Wethington, & Kessler, 2002). The inventory consisted of a series of stem questions asking whether daily stressors across seven domains had occurred within the past
24 hours. For the purposes of these analyses, the only questions that were used are the two related to the interpersonal domain, which asked if an individual had an argument or potential argument during a particular day. The follow-up questions that were used included how stressful the event was (answered on a 4-point Likert scale: 1 – Not At All to 4 – Very, higher scores indicating greater perceived stressfulness), and how much control the participant thought they had over the event (answered on a 4-point Likert scale: 1 – None to 4 – A Lot, higher scores indicating greater control).

**Daily Anticipatory Coping**

Anticipatory coping was measured using the Measure of Mental Anticipatory Processes originally developed by Feldman and Hayes (2005), which is a way of measuring productive and unproductive patterns of mental preparation in coping with future stressful events. The original questionnaire was modified to be asked on a daily basis and was also modified to be event-specific. The items for the daily MMAP were taken from the final factor analysis by Feldman and Hayes (2005). The daily questionnaire consisted of 15 items. Each day, the same set of items was asked for each domain of stressor that could happen the following day. For these analyses, again, only the questions related to interpersonal or potential interpersonal arguments were used. Participants were first asked: “How likely is it that you will have an argument or disagreement with someone within the next 24 hours?” This question was answered on a 5-point Likert scale: 1 – Not at all likely to 5 – Extremely likely. Higher scores indicated a greater expected likelihood of a stressor the following day.
Participants were then asked: “When you think about this potential argument or disagreement how often do you?” This question was followed by a list of 15 items representing the four factors of anticipatory coping. Problem Analysis contained five items (Sample: “I think about why the problem is happening.”) Plan Rehearsal contained three items (Sample: “I think about the solution in a step-by-step fashion.”) Stagnant Deliberation contained five items (Sample: “I think about the problem without making progress on it.”) Outcome Fantasy contained two items (Sample: “I daydream about the problem fixing itself.”) Each item was to be answered by a 5-point Likert scale: 1 – Never to 5 – Always. Higher scores indicated a greater amount of anticipatory coping behaviors performed. Even if participants did not think a stressor was likely to happen (likelihood score of 1), they were still instructed to fill out the anticipatory coping questions. Coping items were asked in the same order for each stressor domain, and in the same order each day.

**Daily Control**

Control was assessed on a daily basis from two inventories that assessed daily control over a variety of general domains. The first questionnaire asked participants “In the past 24 hours, how much did you feel in control of:” memory, physical activity, schedule, and things overall? These questions were answered on a 5-point Likert scale: 0 – Not At All to 4 – In complete control, with higher scores indicating increased control. The second questionnaire asked participants how much they agreed with statements beginning “In the past 24 hours, I have felt in control of:” two questions related to health, one to finances, and one to family and social relationships. These questions were answered on a 6-point Likert scale:
0 – Strongly Disagree to 5 – Strongly Agree, with higher scores indicating higher agreement, and thus, higher feelings of control. A composite of these two inventories were created from standardized scores to represent the overall daily control score.

**Covariates**

Previous research has shown that significant race differences in control beliefs exist, and may lead to differential control-related outcomes (Kennedy et al., 2012). Therefore, due to the makeup of the study sample, race was entered as a covariate in all analyses.

**ANALYSES**

Multilevel models were used to examine the research hypotheses so that both the intraindividual and interindividual variance on each of these measures could be captured.

H1: Daily control beliefs in general relate to control beliefs about a stressful event on the same day.

H1a: This relationship would depend on age.

H1b: This relationship would depend on likelihood of anticipated stressor.

Model 1:

Level 1: Stressor Control \(_{it} = \beta_{0it} + \beta_{1it} \text{(Daily Control)} + \beta_{2it} \text{(Stressor Likelihood)} + \beta_{3it} \text{(Daily Control X Stressor Likelihood)} + r_{it}\)

Level 2: \(\beta_{0i} = \gamma_{00} + \gamma_{01} \text{(Age)} + \gamma_{02} \text{(Race)} + u_{0i}\)

\(\beta_{1i} = \gamma_{10} + \gamma_{11} \text{(Age)} + u_{1i}\)

\(\beta_{2i} = \gamma_{20} + u_{2i}\)

\(\beta_{3i} = \gamma_{30} + u_{3i}\)
The model tested for the same-day fluctuations in daily control relating to stressor control, stressor likelihood, age, and race. The Level 1 equation examined the main effects of daily control and stressor likelihood on stressor control (H1), as well as including an interaction between likelihood and daily control. The $\beta_0$ equation in Level 2 examined the main effects of age ($\gamma_{01}$) and race ($\gamma_{02}$) on stressor control. The $\beta_1$ equation examined the interaction of age ($\gamma_{11}$) and daily control on stressor control (H1a). The $\beta_2$ equation examined the relationship between stressor likelihood and stressor control, while the $\beta_3$ equation examined the interaction of daily control by stressor likelihood on stressor control (H1b).

H2: Daily feelings of general control would relate to anticipatory coping behaviors performed on the same day.

H2a: This relationship would depend on age.

H2b: This relationship would differ between the forms of anticipatory coping performed.

This model was run four times with each of the forms of anticipatory coping entered in separately.

Models 2 – 5:

Level 1: Anticipatory Coping

$\text{Anticipatory Coping}_{it} = \beta_{0it} + \beta_{1it} \text{ (Daily Control)} + r_{it},$

Level 2: $\beta_{0i} = \gamma_{00} + \gamma_{01} \text{ (Age)} + \gamma_{02} \text{ (Race)} + u_{0i}$

$\beta_{1i} = \gamma_{10} + \gamma_{11} \text{ (Age)} + u_{1i}$
The models tested for same-day fluctuations in daily control and anticipatory coping ($\gamma_{10}; H2$), as well as age differences in the Level 1 relationship ($\gamma_{11}; H2a$) with race entered as a covariate.

H3: Higher levels of anticipatory coping performed on the day before a stressor would relate to higher levels of feelings of situational stressor control on the day that the stressor occurs.

H3a: This relationship would depend on age and would vary by form of anticipatory coping performed.

H3b: This relationship would vary by form of anticipatory coping performed and depend on the likelihood of the anticipated stressor occurring.

This model was run four times with each of the forms of anticipatory coping entered in separately.

Models 6 – 9:

Level 1: Stressor Control $\eta_{it} = \beta_{0it} + \beta_{1it} (\text{Anticipatory Coping Day-1}) + \beta_{2it} (\text{Stressor Likelihood}) + \beta_{3it} (\text{Anticipatory Coping Day-1 X Stressor Likelihood}) + r_{it}$

Level 2: $\beta_{0i} = \gamma_{00} + \gamma_{01} (\text{Age}) + \gamma_{02} (\text{Race}) + u_{0i}$

$\beta_{1i} = \gamma_{10} + \gamma_{11} (\text{Age}) + u_{1i}$

$\beta_{2i} = \gamma_{20} + u_{2i}$

$\beta_{3i} = \gamma_{30} + u_{3i}$

This lagged model examined the relationship between previous day anticipatory coping and stressor control on the current day ($\gamma_{10}; H3$), as well as the effects of age
(γ₁₁; H3a) and stressor likelihood (γ₃₀; H3b) on this relationship with race entered in as a covariate.

RESULTS

Effects of race were found to be nonsignificant in all models. There were no differences in daily control by race (γ₀₁ = -0.00, t = -0.02, p = .98) overall in the sample. Therefore, race was removed from subsequent analyses in order to test the most parsimonious models.

Table 1 shows between-person intercorrelations between the study and outcome variables. There were significant between-person intercorrelations between many of the forms of anticipatory coping (Problem Analysis, Plan Rehearsal, Stagnant Deliberation, and Outcome Fantasy). Multilevel models were run to determine the within-person shared variance between forms of coping. The amount of shared within-person variance ranged from 16% to 61%, and all associations were significant at p < .001, specified in Table 2. Despite the shared significant within-person variance overlap, all forms of coping were entered separately in models.

Unconditional models showed significant variance at both the within and between-person level for all outcome variables. Estimates and percentages of partitioned variance are presented in Table 3.

For completeness, all hypothesized models were tested and are presented below. However, a number of the models revealed negative explained variance, which may indicate
that the models are not a good fit for the data. For completeness, even the results of potentially misspecified models are included.

Model 1 (Table 4) revealed nonsignificant main effects on Stressor Control for age ($\gamma_{01} = 0.04, t = 1.33, p = 0.20$), Daily Control ($\gamma_{10} = -0.50, t = -0.94, p = 0.36$), and Anticipated Likelihood ($\gamma_{20} = -0.15, t = -0.71, p = 0.49$). A nonsignificant interaction was found for Daily Control by Age ($\gamma_{11} = -0.06, t = -1.05, p = 0.30$). A significant interaction was found for Daily Control by Anticipated Likelihood of an upcoming stressor ($\gamma_{30} = 1.43, t = 2.71, p = .01$; see Figure 2). The interaction was decomposed using the estimate statement in SAS, which revealed a significant effect in the Low Daily Control slope (slope $= -0.67, t = -2.85, p = .01$.) On days of low feelings of control, beliefs about control about a stressor significantly differed by anticipated likelihood of a stressor the following day. On days with low control with a low anticipated likelihood of a stressor, individuals had higher levels of control during a same-day stressor. However, on days with low daily control, individuals had decreased beliefs of control during a same-day stressor when they highly anticipated a stressor to occur the following day. Significant slopes and contrasts are marked in the interaction in Figure 2. The High Daily Control simple slope (slope $= 0.45, t = 1.60, p = .12$), the difference at Low Anticipated Likelihood (estimate $= -0.82, t = -1.86, p = .08$), and the difference at High Anticipated Likelihood (estimate $= 0.29, t = 1.29, p = .21$) were nonsignificant. Overall, this model explained 9% of the between-person variance and 26% of the within-person variance in stressor control.
To test Hypothesis 2 (H2 and H2a) examining the effects of age and Daily Control on the four forms of anticipatory coping (Problem Analysis, Plan Rehearsal, Stagnant Deliberation, and Outcome Fantasy), Models 2 – 5 were run.

Model 2 (Table 5) tested the effects of age and Daily Control on Problem Analysis anticipatory coping. A significant main effect on coping was found for age, with young-old adults performing a higher level of Problem Analysis coping on a daily basis than old-old adults ($\gamma_{01} = -0.28, t = -2.56, p = .01$), and a nonsignificant main effect was found for Daily Control ($\gamma_{10} = -1.02, t = -0.96, p = .34$). A significant Daily Control by Age interaction was found ($\gamma_{11} = -0.28, t = 2.68, p = .01$; See Figure 3). The interaction was decomposed using the estimate statement in SAS, which revealed significant effects in the difference at Low Daily Control (estimate = $-3.87, t = -4.15, p < .001$), and in the simple slope of young-old adults (slope = $-2.17, t = -2.59, p = 0.01$). Young-old adults performed significantly fewer problem analysis coping behaviors on days with high daily control beliefs than on days with low daily control beliefs. On days of low daily control, old-old adults performed significantly fewer problem analysis coping behaviors than young-old adults. Significant slopes and contrasts are marked in the interaction in Figure 3. The difference at High Daily Control (estimate = $-0.61, t = -0.52, p = .61$) and the simple slope for old-old adults (slope = $1.09, t = 1.34, p = .18$) were nonsignificant. Overall, this model explained 23% of the between-person variance and 21% of the within-person variance in Problem Analysis anticipatory coping.
Results from Model 3 (Table 5), testing the effects of age and Daily Control on Plan Rehearsal anticipatory coping, showed a similar pattern to the results of Model 2. A significant main effect on coping was found for age, with young-old adults performing a higher level of Plan Rehearsal coping on a daily basis than old-old adults. \((\gamma_{01} = -0.19, t = -2.64, p = .01)\), and a nonsignificant main effect was found for Daily Control \((\gamma_{10} = 0.21, t = 0.39, p = .70)\). A significant Daily Control by Age interaction was found \((\gamma_{11} = 0.20, t = 2.70, p = .01; \text{see Figure 4})\). The interaction was decomposed using the estimate statement in SAS, which revealed significant effects at the difference of Low Daily Control \((\text{estimate} = -2.41, t = -4.21, p < .001)\), and in the simple slope of old-old adults \((\text{slope} = 0.99, t = 2.27, p = .02)\). Young-old adults performed significantly fewer Plan Rehearsal coping behaviors on days with high daily control beliefs than on days with low daily control beliefs. Overall, on days of low daily control, old-old adults performed significantly fewer plan rehearsal coping behaviors than young-old adults. Significant effects and contrasts are marked in the interaction in Figure 4. Effects for at the difference of High Daily Control \((\text{estimate} = -0.66, t = -0.89, p = .38)\) and the young-old adult simple slope \((\text{slope} = -0.76, t = -1.75, p = .08)\) were nonsignificant. Overall, this model explained 20% of the between-person variance and 8% of the within-person variance in Plan Rehearsal anticipatory coping.

Results from Models 4 and 5 showed no significant main or interactive effects of age or control on Stagnant Deliberation or Outcome Fantasy coping behaviors, reported in Table 5. Effect sizes for Model 4 showed 3% of the between-person variance and 14% of the within-person variance of Stagnant Deliberation anticipatory coping was explained. Effect
sizes for Model 5 showed -4% of the between-person variance and -1% of the within-person variance in Outcome Fantasy variance was explained. The negative found values of explained variance may indicate model misspecification, or that the models are not a good fit for the data. Effect size was calculated using the method outlined in Raudenbush and Bryk (2002), examining the change in within-person and between-person variance remaining at Level 1 and Level 2. When negative values of effect size resulted, the effect size calculation outlined in Snijders and Bosker (2012) was used, which takes into account the sample size and number of Level 1 units, however, both methods revealed negative variance values, indicating that the models are not a good fit for the data. For completeness, the models showing negative explained variance are still presented.

To test Hypothesis 3 (H3 and H3a) examining the effects of age, previous day’s anticipated likelihood of a stressor, and previous day’s anticipatory coping behavior (with the four forms of anticipatory coping, Problem Analysis, Plan Rehearsal, Stagnant Deliberation, and Outcome Fantasy, run separately) on next-day’s beliefs of control during a stressor, Models 6 – 9 were run.

Results from Models 6 and 7 showed no significant effects of age or anticipatory coping behaviors (Problem Analysis and Plan Rehearsal) on next-day beliefs of control during a stressor, reported in Table 6. Effect sizes for Model 6 showed -59% of the between-person variance and -2% of the within-person variance in next-day stressor control was explained. Effect sizes for Model 7 showed -19% of the between-person variance and -20% of the within-person variance in next-day stressor control was explained. As mentioned
before with the models for Hypothesis 2, the negative found values of explained variance likely indicate that the models are a poor fit for the data.

Results from Model 8 (Table 6), testing the effects of age and Stagnant Deliberation coping on next-day stressor control showed nonsignificant main effects for age (\(\gamma_{01} = 0.07, t = 1.55, p = 0.16\)), Coping (\(\gamma_{10} = 0.18, t = 1.98, p = 0.07\)), and Anticipated Likelihood (\(\gamma_{20} = -0.35 t = -1.07, p = .31\)). A nonsignificant Coping by Likelihood interaction was found (\(\gamma_{30} = -0.10, t = -1.29, p = .22\)), but a significant Coping by Age interaction was found (\(\gamma_{11} = 0.02, t = -2.58, p = .03\); See Figure 5). The interaction was decomposed using the estimate statement in SAS, which revealed significant effects at the difference of Low Previous-Day Coping (estimate = 1.21, \(t = 2.44, p = .03\)) and in the simple slope of young-old adults (slope = 1.41, \(t = 3.00, p = .01\)). Further analyses revealed that young-old adults felt significantly more in control during a stressful event when they had performed higher levels of Stagnant Deliberation coping to prepare for the event, than if they had performed lower levels of Stagnant Deliberation coping. However, when performing lower levels of Stagnant Deliberation coping, old-old adults showed higher levels of control beliefs during a stressor than young-old adults did. Significant slopes and contrasts are marked in the interaction in Figure 5. The difference at High Previous-Day Coping (estimate = -0.08, \(t = -0.20, p = .85\)) and the simple slope for old-old adults (slope = 0.12, \(t = 0.26, p = .80\)) were nonsignificant. Overall, this model explained 17% of the between-person variance and 19% of the within-person variance in next-day stressor control.
Results from Model 9 showed no significant main or interactive effects of age, anticipated likelihood, or Outcome Fantasy coping behaviors on next-day beliefs of control during a stressor, as reported in Table 6. Effect sizes for Model 9 showed -19% of the between-person variance and -6% of the within-person variance in next-day stressor control was explained. Similar to the results for Model 6 and 7, the negative found values of explained variance likely indicate the data are a poor fit for the model.

DISCUSSION

This study differed from previous studies on stress and coping because it analyzed anticipatory coping with stress, as opposed to reactive forms of coping. Because of the study’s design, the stress and anticipatory coping process could be examined on a daily basis in order to get time-ordered effects on coping with specific daily stressful events. In addition, the daily fluctuating measures of control allowed for a closer analysis of the effects of control on stress and coping than a general trait-level measure of control could.

Overall, varied linkages were found between general feelings of control, coping behaviors, and feelings of control during a stressful event.

Hypothesis 1

In the aggregate, beliefs of general control on a daily basis do not directly inform beliefs of control during a stressful event, but this relationship depends on the anticipated likelihood of an upcoming event the next day. Control of a stressful event is highest on days when individuals report low general feelings of control overall, but also a low likelihood of a stressful event happening on the next day (Figure 2). In these instances, perhaps individuals
are more able to focus on the stressful event as it is happening, rather than expending resources on a potential event in the future. However, when there is a high anticipated likelihood of a stressor tomorrow, then low general feelings of control are associated with lower feelings of control during a stressful event. Domain-general feelings of control may inform feelings of control during a stressful event, under the conditions when a stressor seems highly likely, but not very controllable (Figure 2: Low Daily Control slope).

This model of low feelings of general control relating to low feelings of controllability during a predicted stressor fits with previous findings from laboratory settings (Agrigoroaei et al., 2013). Older adults know that they will be in a stressful situation, but feel that they can do little to control it, therefore, feelings of control are lower during any stressful situation. In the case of the current analyses, feelings of control are lower during a stressor on the same day, not the future stressor that is being anticipated.

For older adults with high mastery or high feelings of control, control beliefs have previously been shown to vary by domain. Domains such as social domains can be very high in feelings of control, while in the health domain, feelings of control may be lacking (Lachman, 1991). In these instances, domain-general feelings of control may inform feelings and behaviors regarding control in different manners.

**Hypothesis 2**

The extent to which feelings of control inform anticipatory coping behaviors differs by age and by form of anticipatory coping. Young-old adults perform more Problem Analysis and Plan Rehearsal anticipatory coping on a daily basis than old-old adults. In
addition, high feelings of daily control seem to be associated with more coping behaviors among the young-old adults than old-old adults.

Control can be defined in terms of primary versus secondary control. Primary control is defined as an individual’s attempts to take control of their environment or situation, while secondary control refers to an individual’s attempts at internal control of their emotional response to their environment (Baltes & Baltes, 1986). If the results of the two models are compared (Figures 3 and 4), the differential effects of control on coping behaviors between age groups may be related to a difference between primary and secondary control beliefs.

Control beliefs may relate to the distinct anticipatory behaviors to prepare for a potential event in different ways. The daily control beliefs questionnaire used in this study measured primary coping beliefs, or beliefs about how much control an individual has over their situation. Aspinwall (2005) hypothesized that coping behaviors could be oriented towards either primary or secondary control.

Based on Heckhausen’s life-span theory of control (1995), access to primary control-oriented aspects of an individual’s life, and beliefs about primary control decline in older adulthood. This may lead to a difference in coping strategies used between the young-old and the old-old, as the old-old are relying more on beliefs and strategies that are oriented with secondary control. By this hypothesis, Problem Analysis would be more oriented towards primary control beliefs, as shown by the significant effect of control on Problem Analysis coping among the young-old (Figure 3). Plan Rehearsal would be more oriented towards secondary control beliefs, as shown by the significant effect of control on Plan
Rehearsal coping among the old-old (Figure 4), if, indeed, a difference in control beliefs does act as the mechanism through which anticipatory coping strategies are chosen.

In Lazarus and Folkman’s (1984) model of stress, appraisal, and coping, control beliefs would enter into the stress process at the appraisal point, where the stressor is being appraised and form of coping is being chosen. Control beliefs may influence appraisal by informing individuals to perform greater or lower levels of coping behaviors. A high belief of control may lead to a sense of efficacy of coping, where the individual believes their efforts will be more productive, and will lead to a higher level of coping performed. Alternatively, a high belief of control may lead to a sense that extra effort is not necessary in order to gain control of a stressor, and will lead to a lower level of coping performed.

From the results of Hypothesis 2, low daily feelings of control seem to inform young-old adults to perform more Problem Analysis and Plan Rehearsal coping than old-old adults (Figures 3 and 4: Low Daily Control difference), which would fit in the model that control beliefs influence coping behaviors among young-old adults by leading to more coping behaviors performed, in an attempt to gain more control over a stressful situation. Under days with high control beliefs, young-old adults perform less Problem Analysis coping that is aligned with these primary control beliefs (Figure 3: High Daily Control difference), therefore, this fits the model that under high primary control, more primary control-oriented effort is not needed to gain control of a stressful situation. Under days with high control beliefs, old-old adults perform more Plan Rehearsal coping that is aligned with secondary control beliefs (Figure 4: High Daily Control difference), which fits the model that old-old
adults are attempting to use their greater feelings of control under a stressful situation, but are using a coping form that fits with the secondary control-oriented resources that they are more easily able to utilize (Heckhausen, 1995).

**Hypothesis 3**

There was not a main effect of previous-day’s anticipatory coping on next-day stressor control beliefs. Young-old adults had significantly higher control beliefs than old-old adults during a stressor when they had performed higher amounts of Stagnant Deliberation coping the day before. On days when individuals only performed low amounts of Stagnant Deliberation in preparation for an event, old-old adults were able to gain more benefit than young-old adults from this lower level of coping. Stagnant Deliberation is characterized as having a high degree of perseveration of thought, without finding a solution (Feldman & Hayes, 2005). However, Feldman and Hayes also found that Stagnant Deliberation was related to active cognitive appraisal, which is a measure of an individual’s ability to actively appraise their situation in the face of negative affect (Nolen-Hoeksema & Morrow, 1991). Sustaining cognitive effort while actively contemplating a possible stressor may help individuals make sense of a stressful situation, even if their efforts did not seem to produce a solution (Fresco, Frankel, Mennin, Turk, & Heimberg, 2002).

In the aggregate, Stagnant Deliberation coping did not affect control beliefs in the same way across age groups. There was not a main effect of age group on coping, showing that across all the days of the study, young-old and old-old adults were performing similar levels of Stagnant Deliberation coping, but seeing differential effects on days when they were
performing low levels of Stagnant Deliberation. The aspect of Stagnant Deliberation related to perseveration of thought might be the key to increasing young-old adults’ beliefs of control under a stressful situation. Continuing to persevere and expend cognitive effort, even when a well-defined solution has not been found, may lead to an increase in the feeling of control, because the individual feels like they have done more about an ill-defined problem. This extended cognitive effort does not change old-old adults’ feelings of control within a stressful situation because overall feelings of control are already high among the old-old, regardless of coping performed. This may show an age-related increase in feelings of control among certain domains, including social realms (Lachman, 1986). Older adults with more expertise in dealing with their personal experience with coping may have more of a sense of mastery over coping in general (Lachman & Weaver, 1998), and therefore, may have a greater sense of control from performing any level of coping. In different domains of stressors where control beliefs fluctuate more widely among the old-old, such as health stressors, feelings of control may be more influenced by anticipatory coping efforts (Lachman, 1991).

LIMITATIONS AND FUTURE DIRECTIONS

The findings of the present study should be considered within the context of several limitations. Primary among the limitations is the relatively small person-level sample size ($n = 43$), and small number of days in which interpersonal stressors occurred (48 for Model 1, 26 for Models 6-9). Although interpersonal stressors are the most frequently endorsed daily stressors of older adults (Neupert, Almeida, Mroczek, & Spiro, 2006) and the most
commonly occurring in the present study (interpersonal stressors occurred on 13% of total study days), the occurrence of these stressors is not very common within the older adult population. Additional possibilities exist for future analyses regarding the presence and effects of non-events, as in a stressor that was believed to be likely to happen, and was prepared for with anticipatory coping strategies, but never occurred. Non-events could signify an instance where anticipatory coping was highly successful, because coping before the event could have allowed the individual to avoid it altogether. Future studies could examine the accuracy of individual’s appraisals of likelihood, to address both non-events and surprise stressors, incidents that occurred, but were not highly anticipated or prepared for with coping methods. This incongruence of expectations to reality may occur more among young-old adults with less expertise in dealing with their personal stressor and coping experience, and may lead to worse stressor outcomes.

Both to address these limitations, and as an avenue for future study, other domains of daily stressors should be examined in a similar way. Previous work has shown differential relationships between control and daily stress across different domains, such as comparing reactivity to interpersonal stressors to stressors at work, at home, or occurring within one’s social network (Neupert, Almeida, & Charles, 2007).

The measure of daily control beliefs used in this study only examined primary control beliefs. According to Heckhausen’s (1995) life-span theory of control, access to primary and secondary control changes over older adulthood. By Dynamic Integration theory (Labouvie-Vief, 2008), older adults use more secondary control strategies than primary control
strategies. Therefore, both primary and secondary control beliefs need to be measured on a daily basis, in order to explain some of the differential effects found between young-old and old-old adults, and to attempt to link coping strategies to primary versus secondary control beliefs.

The forms of anticipatory coping examined in this study were found to have high levels of both between-person correlations (Table 1) and within-person shared variance (Table 2). In the future, a more parsimonious model could be tested, collapsing the forms of coping into the highly correlated categories, and comparing these results of two-form models to the four-form models. Coping could either be collapsed into what Feldman and Hayes (2005) categorized as adaptive (Problem Analysis and Plan Rehearsal) versus maladaptive (Stagnant Deliberation and Outcome Fantasy), or coping forms could be collapsed into categories expected to match up with primary control beliefs (Problem Analysis and Stagnant Deliberation) versus secondary control beliefs (Plan Rehearsal and Outcome Fantasy). Due to the high degree of multicolinearity, it is possible that a more parsimonious structure can be found for the MMAP on a daily basis.

Conclusion

For all older adults, daily control beliefs and situational stressor control beliefs were both significantly likely to decrease as perceived likelihood of a future stressor increased. Among certain forms of coping, age differences in amount of coping performed by control beliefs were evident, with young-old adults performing more coping behaviors than old-old adults on days with low daily control beliefs. Young-old adults performed significantly less
Problem Analysis coping on days with high daily control beliefs, and old-old adults performed significantly more Plan Rehearsal coping on days with high daily control beliefs than on days with low daily control beliefs. On days with low levels of previous-day Stagnant Deliberation coping performed, old-old adults had significantly higher situational stressor control beliefs than young-old adults during a stressor. On days with high levels of previous-day Stagnant Deliberation coping performed, young-old adults had significantly higher stressor control beliefs than on stressor days where they had performed low levels of Stagnant Deliberation coping on the previous day.

These results provide support for a process-centered contextual approach to examining anticipatory coping, appraisal, and stress. Control beliefs play an important role in the appraisal of anticipated stress, and can assist in coping efficacy among older adults.
REFERENCES


Table 1

*Between-person intercorrelations between demographic variables, general and stressor control beliefs, coping likelihood and coping forms.*

<table>
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<td>2. Race</td>
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<td>9. Outcome Fantasy</td>
<td>0.06</td>
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<td>-0.21</td>
<td>0.16</td>
<td>0.48*</td>
<td>0.16</td>
<td>0.05</td>
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*p<.05
Table 2

Percentages of within-person shared variance by coping form.

<table>
<thead>
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<th>1</th>
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<tbody>
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<td>1. Problem Analysis</td>
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<tr>
<td>2. Plan Rehearsal</td>
<td>61%*</td>
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<td>3. Stagnant Deliberation</td>
<td>44%*</td>
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<td>4. Outcome Fantasy</td>
<td>16%*</td>
<td>18%*</td>
<td>34%*</td>
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*p<.001
Table 3

*Estimates and partitioned variance for outcome variables.*

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<tr>
<th>Variable</th>
<th>Estimate (SE)</th>
<th>Between (Within)%</th>
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<tr>
<td>Stressor Control</td>
<td>2.50 (0.24)*</td>
<td>50% (50%)</td>
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<tr>
<td>Problem Analysis</td>
<td>12.57 (0.95)*</td>
<td>79% (21%)</td>
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<tr>
<td>Plan Rehearsal</td>
<td>7.65 (0.63)*</td>
<td>80% (20%)</td>
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<tr>
<td>Stagnant Deliberation</td>
<td>8.64 (0.55)*</td>
<td>62% (38%)</td>
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<tr>
<td>Outcome Fantasy</td>
<td>3.05 (0.28)*</td>
<td>65% (35%)</td>
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</table>

*p < .05
### Table 4 (Hypothesis 1)

*Unstandardized estimates (and Standard Errors) of effects of Daily Control on Stressor Control by Age.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1: Estimates</th>
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<td>Fixed Effects</td>
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<tr>
<td>Stressor Control, $\beta_0$</td>
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<tr>
<td>Intercept, $\gamma_{00}$</td>
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<td>Age, $\gamma_{01}$</td>
<td>0.04(0.03)</td>
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<td>Daily Control, $\beta_1$</td>
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<tr>
<td>Average Slope, $\gamma_{10}$</td>
<td>-0.50(0.53)</td>
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<tr>
<td>Age, $\gamma_{11}$</td>
<td>-0.06(0.06)</td>
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<tr>
<td>Anticipated Likelihood, $\beta_2$</td>
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<td>Average Slope, $\gamma_{20}$</td>
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<td>Control X Likelihood, $\beta_3$</td>
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</tr>
<tr>
<td>Average Slope, $\gamma_{30}$</td>
<td>1.43(0.53)*</td>
</tr>
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</table>

| Random Effects                  |                    |
| Stressor Control ($\tau_{00}$)  | 0.74(0.47)         |
| Within-Person ($\sigma^2$)      | 0.59(0.20)*        |

*p<.05, N = 42 participants, 48 days containing stressors.*
Table 5 (Hypothesis 2)

Unstandardized estimates (and Standard Errors) of effects of Daily Control on Coping by Age.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 2: Problem Analysis</th>
<th>Model 3: Plan Rehearsal</th>
<th>Model 4: Stagnant Deliberation</th>
<th>Model 5: Outcome Fantasy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping, $\beta_0$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept, $\gamma_{00}$</td>
<td>12.62(0.85)*</td>
<td>7.63(0.57)*</td>
<td>8.85(0.56)*</td>
<td>3.05(0.28)*</td>
</tr>
<tr>
<td>Age, $\gamma_{01}$</td>
<td>-0.28(0.11)*</td>
<td>-0.19(0.07)*</td>
<td>-0.03(0.07)</td>
<td>0.01(0.04)</td>
</tr>
<tr>
<td>Daily Control, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Slope, $\gamma_{10}$</td>
<td>-1.02(1.06)</td>
<td>0.21(0.55)</td>
<td>-1.43(0.79)</td>
<td>-0.10(0.27)</td>
</tr>
<tr>
<td>Age, $\gamma_{11}$</td>
<td>0.38(0.14)*</td>
<td>0.20(0.08)*</td>
<td>0.16(0.11)</td>
<td>0.04(0.04)</td>
</tr>
<tr>
<td>Random Effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coping ($\tau_{00}$)</td>
<td>23.93(6.44)*</td>
<td>11.01(2.89)*</td>
<td>9.44(2.72)*</td>
<td>2.60(0.69)*</td>
</tr>
<tr>
<td>Within-Person ($\sigma^2$)</td>
<td>6.63(0.74)*</td>
<td>3.07(0.34)*</td>
<td>5.16(0.57)*</td>
<td>1.35(0.14)*</td>
</tr>
</tbody>
</table>

*p<.05 N = 43 participants, 217 days across all participants.
Table 6 (Hypothesis 3)

*Unstandardized Estimates (and Standard Errors) of effects of Previous Day Coping on Next Day Stressor Control by Age.*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 6: Problem Analysis</th>
<th>Model 7: Plan Rehearsal</th>
<th>Model 8: Stagnant Deliberation</th>
<th>Model 9: Outcome Fantasy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stressor Control, $\beta_0$</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Intercept, $\gamma_{00}$</td>
<td>2.75(0.53)*</td>
<td>2.85(0.54)*</td>
<td>2.78(0.39)*</td>
<td>2.66(0.47)*</td>
</tr>
<tr>
<td>Age, $\gamma_{01}$</td>
<td>0.04(0.06)</td>
<td>0.05(0.06)</td>
<td>0.07(0.05)</td>
<td>0.04(0.05)</td>
</tr>
<tr>
<td>Previous Day Coping, $\beta_1$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Slope, $\gamma_{10}$</td>
<td>-0.02(0.07)</td>
<td>0.01(0.12)</td>
<td>0.18(0.09)</td>
<td>0.43(0.28)</td>
</tr>
<tr>
<td>Age, $\gamma_{11}$</td>
<td>0.04(0.06)</td>
<td>-0.01(0.02)</td>
<td>-0.02(0.01)*</td>
<td>0.01(0.03)</td>
</tr>
<tr>
<td>Anticipated Likelihood, $\beta_2$</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Slope, $\gamma_{20}$</td>
<td>-0.10(0.55)</td>
<td>-0.38(0.49)</td>
<td>-0.35(0.33)</td>
<td>-0.26(0.40)</td>
</tr>
<tr>
<td>Coping x Likelihood, $\beta_3$</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Slope, $\gamma_{30}$</td>
<td>-0.03(0.08)</td>
<td>0.10(0.15)</td>
<td>-0.10(0.09)</td>
<td>-0.24(0.21)</td>
</tr>
<tr>
<td>Random Effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control ($\tau_{00}$)</td>
<td>1.30(1.02)</td>
<td>0.98(0.93)</td>
<td>0.69(0.54)</td>
<td>0.98(0.80)</td>
</tr>
<tr>
<td>Within-Person ($\sigma^2$)</td>
<td>0.83(0.34)*</td>
<td>0.96(0.39)*</td>
<td>0.65(0.26)*</td>
<td>0.85(0.33)*</td>
</tr>
</tbody>
</table>

*p<.05, N = 36 participants, 26 days containing stressors.
Figure 1: Hypothesized Relationships and Moderations Between Study Variables.
*p<.05, significant simple slope.

Figure 2: Hypothesis 1, Daily Control and Daily Anticipated Likelihood.
*p<.05, significant simple slope or difference score.

Figure 3: Hypothesis 2, Daily Problem Analysis and Daily Control Beliefs.
*p<.05, significant simple slope or difference score.

Figure 4: Hypothesis 2, Daily Plan Rehearsal and Daily Control.
*p<.05, significant simple slope or difference score.

Figure 5: Hypothesis 3, Previous-Day Stagnant Deliberation and Next-Day Stressor Control.