Stuck in Limbo: Motivational Antecedents and Consequences of Experiencing Action Crises in Personal Goal Pursuit

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Abstract

Objective: Action crises describe the intrapsychic conflicts individuals experience when they feel torn between further goal pursuit and goal disengagement. The present investigation introduces autonomous and controlled motivation as independent predictors of action crisis severity, beyond known personality-level predictors (action orientation) and novel personality-level predictors (Neuroticism and Conscientiousness).
Method: Using a multi-wave prospective longitudinal design and multilevel modeling (MLM), we followed students pursuing three personal goals across an academic semester ($N = 425$ undergraduates; 76% female; 57% Caucasian; $M_{age} = 20.2$, $SD = 2.3$). In two follow-up surveys, participants reported on the severity of their action crises, goal progress, and symptoms of depression.
Results: Results suggest that autonomous motivation shields individuals from experiencing action crises, whereas controlled motivation represents a risk factor for developing action crises beyond personality-level predictors. Furthermore, MLM revealed that autonomous motivation is a significant predictor of action crisis severity at both the within- and between-person levels of analysis. Action crises mediate both the relationship between autonomous motivation and goal progress, and the relationship between controlled motivation and symptoms of depression.
Conclusions: The implications of these findings for the prevention of action crises and motivation research are discussed.

Keywords: Action crises, motivation, personality, goal progress, symptoms of depression

The pursuit of goals represents a central task in personal development with important consequences for well-being, adjustment, and personal growth. Imagine two college students pursuing the ambitious personal goal of "being accepted to medical school." The first student chose this goal freely and wholeheartedly—she finds her biology coursework fascinating and spends much of her free time volunteering at the local hospital. The second student expresses some degree of interest in the health sciences but also feels pressured to become a doctor—she feels like she ought to strive for the medical profession given her track record of academic excellence. Both students are likely to experience setbacks and obstacles in their pursuit of this goal, for example, an uncompetitive score on a standardized entrance exam or writer's block on the admissions essays. The students may also have informative experiences that lead them to question their goal, such as a conversation with a doctor who complains about poor quality of life, or a career information session advertising for exciting alternative professions. These setbacks, challenges, or informative experiences may result in an action crisis: a decisional conflict about whether to persevere and invest further in the goal, or to cut one's losses and begin goal disengagement (Brandstätter, Herrmann, & Schüler, 2013). We propose that people's autonomous and controlled goal motivation are useful predictive factors in determining susceptibility to the development of action crises in personal goal pursuit, beyond dispositional self-regulation associated with goal progress. Research on goal self-concordance has shown that "not all personal goals are personal" (Sheldon & Elliot, 1998), indicating that personal endeavors can emanate from both autonomous reasons for action (e.g., interest and genuine task enjoyment) and controlled reasons (e.g., external incentives and internal pressures). The first student's genuine enjoyment of tasks related to her goal, as well as the goal's harmonious integration with her values and identity, could shield her from the decisional conflict and rumination associated with an action crisis. In turn, this might allow her to make greater progress in her goal over time. In contrast, we might expect the second student with relatively more controlled reasons for "being accepted to

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medical school" to be more vulnerable to a decisional conflict in the face of setbacks, obstacles, or attractive alternatives, since the goal does not reflect her genuine interests. The second student's susceptibility to a severe action crisis might contribute to increased negative affect, such as feelings of helplessness and disappointment over time. Ultimately, this may result in increased symptoms of depression.

Action Crises

While self-regulation research traditionally focused on goal attainment (Bandura, 1977; Carver & Scheier, 1981), the field has expanded to consider goal disengagement—the relinquishing of behavioral effort and psychological commitment—from unattainable pursuits (Wrosch, Scheier, Miller, Schulz & Carver, 2003). Action crises have been defined as an intrapsychic decisional conflict between further goal pursuit and goal disengagement (Brandstätter & Schüler, 2013). The concept of action crises arises from Klinger's (1977) notion that goal pursuit and goal disengagement are not discrete and mutually exclusive states. As such, action crises have been described as a transitional phase in goal striving where individuals find themselves torn between continued goal engagement and goal disengagement (Herrmann & Brandstätter, 2013, 2015). The decisional conflict associated with action crises is thought to precede goal disengagement, although not every action crisis necessarily results in goal disengagement. Indeed, action crises can be overcome or resolved through perseverance and adaptations to the goal-striving process (Herrmann & Brandstätter, 2013). Nevertheless, the severity of an action crisis has been shown to longitudinally predict the onset of disengagement, with more severe action crises tending to result in earlier goal disengagement (Herrmann & Brandstätter, 2015).

Action crises typically result from a loss of goal attainability and/or goal desirability (Brandstätter & Schüler, 2013; Herrmann & Brandstätter, 2013). A goal might be perceived as less attainable when goal pursuit is met with recurring setbacks, obstacles, and difficulties, or when a sudden change in life circumstance depletes resources or instills goal-related doubts and implementation disorientation (Brandstätter & Schüler, 2013; Brandstätter et al., 2013). Likewise, a goal may be perceived as less desirable when the pursuit becomes tedious, requires excessive sacrifices, interferes with other valued goals, or appears less attractive with the emergence of new information, tempting alternatives, or interesting opportunities.

Action crises have been associated with affective, physiological, and cognitive consequences. Brandstätter et al. (2013) showed that the intensity of action crises in personal goals was predictive of decreased life satisfaction and reduced positive affect. Action crises have also been associated with increased health complaints (Brandstätter et al., 2013; Herrmann & Brandstätter, 2013), as well as markers of increased physiological stress (i.e., increased cortisol secretion) and decreased running performance in marathoners (Brandstätter et al., 2013).

Finally, action crises have been associated with a devaluation of a goal's perceived attainability and desirability, and an increased reevaluation of goal-related costs and benefits (Brandstätter & Schüler, 2013). The adverse well-being and health consequences associated with action crises suggest that individuals might benefit from avoiding this state of conflict and doubt. Moreover, the effects of maladaptive goal persistence on health and well-being are well documented in the goal disengagement literature (Wrosch, Scheier, & Miller, 2013). However, some researchers have postulated the adaptive potential of action crises, if resolved in a limited time frame (Herrmann & Brandstätter, 2013). The goal reevaluation and cost–benefit analysis associated with a decisional conflict may bring about heightened goal commitment or, conversely, a sensible decision to relinquish a problematic goal (Brandstätter & Herrmann, 2016).

Dispositional Predictors of Action Crises

Psychological research has recently started to uncover dispositional predictors of action crises. One individual difference measure that has received attention in the field is action (vs. state) orientation. Action orientation is concerned with characteristic differences in the pursuit and maintenance of goals through emotion control, performance efficiency, and information-processing mechanisms, such as allocation of attention and inhibition of extraneous cognitions (Kuhl & Goschke, 1994). The disposition toward action versus state orientation is considered in two circumstances: action orientation subsequent to failure (AOF) and decision-related action orientation (AOD; Kuhl & Beckman, 1994). AOF is concerned with the ability to self-regulate and reduce negative affect subsequent to a failure experience (action orientation), as opposed to becoming preoccupied with the failure and ruminating about it (state orientation). AOD describes an individual's ability to act upon decisions quickly (action orientation) instead of hesitating to initiate an intended activity (state orientation). Herrmann and Brandstätter (2013) found that dispositional action orientation shielded individuals from experiencing action crises and enabled individuals to resolve these crises when they arose. Herrmann and Brandstätter (2013) also showed that the positive effect of action orientation on well-being is partially mediated by action crises. In the present study, action versus state orientation is used as a covariate.

However, with the exception of action orientation, other personality constructs have not been examined. Brandstätter et al. (2013, p. 13) suggested that other candidate personality variables such as Neuroticism (Costa & McCrae, 1992) and general goal adjustment tendencies (i.e., the dispositional ability to disengage from unattainable goals and reengage with new pursuits; Wrosch et al., 2003) might also be relevant in the prediction of action crises. Neuroticism is an established determinant of well-being (Lykken & Tellegen, 1996), and it may be related to the ruminative component of an action crisis (Nolan, Roberts, & Gotlib, 1998). However, the relationship between Neuroticism

and goal-related processes is less clear. For example, research has found that effects of self-concordance on goal progress are not reducible to the effects of Neuroticism (Sheldon & Houser-Marko, 2001). The personality trait most directly linked to goal progress is Conscientiousness (Romero, Villar, Luengo, & Gómez-Fraguela, 2009), which is often defined in terms of the extent to which individuals are goal oriented, industrious, and achievement focused (Costa & McCrae, 1992). Thus, in the present study, we included measures of Conscientiousness, Neuroticism, and goal adjustment tendencies to determine the effects of these personality variables on the development of action crises. Importantly, in addition to investigating these personality-level constructs, the present investigation sought to examine the unique contribution of motivational predictors of action crises.

Autonomous and Controlled Motivation in Goal Pursuit

The self-concordance model of goal striving (Sheldon & Elliot, 1999), developed as an extension of self-determination theory (SDT; Deci & Ryan, 2012), examines longitudinal increases in well-being, psychological growth, and personality development as a function of successfully pursuing self-concordant goals. Self-concordant goals are thought to arise from a person's life-long evolving interests and his or her core values (Sheldon & Elliot, 1999). Importantly, this model examines the extent to which goals are pursued for autonomous and controlled reasons, making a distinction in an individual's perceived locus of causality (PLOC) for pursuing goals. The reasons for goal pursuit are thought to lie on a continuum of internalization, from externally regulated motivation (e.g., to obtain rewards or avoid punishment) to intrinsic motivation (e.g., doing something because it is inherently interesting and fun; Ryan, 1995). Controlled motivation subsumes the two least internalized forms of motivation on the continuum: pursuing goals in response to external contingencies, such as rewards or punishments (external regulation), and pursuing goals out of internal feelings of obligation or pressure (introjected motivation). Autonomous motivation describes partially or fully internalized reasons for goal pursuit, such as choosing a goal because one believes the goal to be meaningful and important (identified motivation), because it truly represents personal values and interests (integrated motivation), or because the pursuit is fun and enjoyable in itself (intrinsic motivation).

Since autonomous goals reflect people's authentic values and interests, they allow individuals to draw upon volitional resources, such as sustained goal effort, to ensure consistent goal energization (for a review, see Koestner, 2008; Sheldon, 2014). In the goal-striving literature, autonomous motivation for goal pursuit has been robustly linked to sustained goal effort (Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001), increased goal progress (Downie, Koestner, Horberg, & Haga, 2006; Judge, Bono, Erez, & Locke, 2005; Koestner, Otis, Powers, Pelletier, & Gagnon, 2008), decreased goal

ambivalence (Koletzko, Herrmann, & Brandstätter, 2015), reduced temptation (Milyavskaya, Inzlicht, Hope, & Koestner, 2015), and increased goal attainment (Sheldon & Elliot, 1998; Sheldon & Houser-Marko, 2001). Furthermore, autonomous goal motivation has been shown to moderate the effect of implementation planning on goal progress, so that implementation plans are associated with relatively greater goal progress when combined with autonomous goals than when not combined (Koestner, Lekes, Powers, & Chicoine, 2002). As such, autonomous motivation for goal pursuit may be a protective factor for developing action crises. The sense of choice and ownership a person experiences when pursuing an autonomous goal might protect him or her from the procrastination, setbacks, and implementation disorientation associated with action crises.

In contrast, controlled motivation has a weak and variable relationship with goal outcome measures such as goal progress and attainment (see Gaudreau, Carraro, & Miranda, 2012; Koestner et al., 2008). These findings imply that effects of overall self-concordance on goal progress and attainment may be driven solely by autonomous motivation (Koestner, 2008). Since controlled motivation relies on the vicissitudes of the external situation, researchers have argued that controlled motivation exerts a less stable influence on behavior over time and across situations (Koestner, 2008). Controlled motivation has been positively associated with participants' intended effort at the decisional phase of goal striving, but it was not shown to translate into actual goal effort 2 and 4 weeks later (Gollwitzer, 1996). This finding suggests that people have trouble translating their controlled intentions to tangible activity at the actional phase of goal pursuit. Thus, when frustrations or setbacks set in, controlled goals may have a hard time competing against other appealing action tendencies, resulting in action crises. Controlled motivation has also been linked to increased conflict between goals. Downie et al. (2006) measured the extent to which participants' four personal goals were in conflict with one another versus working well together. Results indicated a positive relationship between introjected goal motivation and experiencing conflict between goals, indicating that controlled motivation had a negative effect on the harmonious integration of people's goals. In the present study, we sought to extend this finding by examining the relationship between controlled motivation and conflict within personal goal pursuit (i.e., an action crisis). Since external and introjected goals tend to be less representative of enduring interests and values (Ryan, 1995), the volitional strength behind them is likely to fade once obstacles are encountered (Gollwitzer, 1990). Extrinsically motivated action clearly holds the potential for a mismatch between external demands and internal desires, values, and interests. The partial or incomplete integration of introjected goals with the self may also lead to inner conflict and feelings of ambivalence (Deci & Ryan, 2012; Koletzko et al., 2015). As such, the feelings of pressure and demand associated with a controlled goal may represent a risk factor for developing action crises. In turn, feeling torn about a goal may result in negative affect, such as feelings of helplessness and disappointment, ultimately leading to

increased symptoms of depression over time (Kelly, Mansell, & Wood, 2011). Controlled reasons for action have been associated with decreased mental health outcomes, such as anxiety, depression, and social dysfunction (Ryan, Rigby, & King, 1993). Soenens, Berzonsky, Dunkel, Papini, and Vansteenkiste (2011) demonstrated a positive association between controlled regulation of adolescents' identity commitments and depressive symptoms, providing evidence to suggest that controlled goal motivation may be linked to symptoms of depression.

A limitation of a previous study that considered the role of goal motivation in the development of action crises is that these researchers computed a self-concordance index as opposed to considering the independent roles of autonomous and controlled forms of motivation (Herrmann & Brandstätter, 2013). There are two important reasons why autonomous and controlled motivation should not be aggregated: They are not significantly related nor are their relations to goal outcomes mirror-image opposites (Judge et al., 2005; Koestner et al., 2008). Thus, while Herrmann and Brandstätter (2013) examined the role of motivation previously, they did not consider autonomous and controlled motivation separately, or outside of the context of trait action orientation.

The Present Study

The present study aimed to shed light on the independent predictive effects of autonomous and controlled motivation as they relate to the development of action crises, beyond personality-level constructs. Moreover, we sought to elucidate the between- and within-individual relationships between motivation, dispositional variables, and intensity of action crises. Previous research has found substantial variability in goal motivation and goal outcomes within individual participants (Werner, Milyavskaya, Foxen-Craft, & Koestner, 2016). This suggests that beyond normative differences in self-regulatory capacity, the same individual may vary widely in his or her motivation for different goals, with some reflecting more autonomous and others more controlled reasons for action. While goal self-concordance has been suggested to nicely complement Kuhl and Fuhrman's (1998) theory of volition (see Sheldon & Elliot, 1998, p. 554), there is sparse evidence to support the notion that trait differences in action orientation (i.e., the ability to self-regulate and reduce negative affect) are the main source of variability in self-concordant goal setting. Herrmann and Brandstätter (2013, study 3) provided the first evidence that goal self-concordance partially mediates the relationship between trait-level action orientation and action crises. Specifically, these researchers found that individuals high in action orientation displayed increased self-concordant goal setting. The present study seeks to build on Herrmann and Brandstätter (2013) in five important ways: (a) assessing relevant personality trait predictors besides action orientation, (b) considering autonomous and controlled goal motivation separately, (c) examining the role of goal motivation in a multilevel framework, (d) investigating two different outcome

measures to demonstrate the effect of action crises (goal progress and symptoms of depression), and (e) testing intended effort as a mechanism through which autonomous motivation may act as a protective factor for the emergence of action crises.

To examine the longitudinal impact of autonomous and controlled goal motivation on the development of action crises, goal progress, and symptoms of depression, we recruited university students who were pursuing three personal goals over the course of an academic semester. We hypothesized that autonomous and controlled motivation would have independent predictive effects for the development of action crises. Specifically, we expected autonomous motivation to represent a shielding factor for the development of mid-semester action crises, whereas we expected controlled motivation to represent a risk factor for developing more severe action crises in personal goal pursuit. Moreover, we hypothesized that the effects of goal motivation would predict significant variance in the severity of action crises beyond trait-level action (vs. state) orientation and other important goal-related individual difference measures (i.e., Conscientiousness, Neuroticism, and goal adjustment tendencies). Specifically, we predicted that high Neuroticism would be a risk factor associated with more severe action crises, and that high Conscientiousness would be a protective factor associated with less severe action crises. However, we did not hypothesize that trait-level goal adjustment tendencies (disengagement and reengagement capacities) would predict between-person differences in action crisis susceptibility, as these traits are related to goal disengagement that occurs at a later temporal phase in the goal-striving cycle (Heckhausen, Wrosch, & Schulz, 2010).

To elaborate our understanding of the role of goal motivation in the development of action crises, we also sought to examine the effects of within-person differences in autonomous motivation. Specifically, we hypothesized that autonomous motivation would show shielding effects at the level of the person. In other words, we expected that individuals would tend to experience their least severe action crisis on their most autonomous goal compared to their other goals, controlling for their general tendency to set autonomous goals.

Finally, we wanted to test two mediation pathways to highlight the motivational antecedents and consequences of experiencing action crises in personal goal pursuit, as well as a third mediation to elucidate the negative relationship between autonomous goal motivation and action crisis severity. First, we predicted that action crisis severity would mediate the well-established relationship between autonomous motivation and goal progress. Second, we predicted that action crisis severity would mediate the relationship between controlled motivation and symptoms of depression. Third, we sought to understand a possible mechanism through which autonomous motivation predicts less severe action crises. Specifically, we wanted to test whether the intention to exert greater effort on a goal mediates the negative relationship between autonomous motivation and action crisis severity. We hypothesized that the intention to exert greater effort might act as a buffering factor for experiencing

decisional conflict because it denotes a willingness to persevere in the face of goal challenges, obstacles, or distractions.

METHOD

Participants and Procedure

Four hundred twenty-five participants (76% female; 57.4% Caucasian, 32.2% Asian) ages 17–27 ($M = 20.2$, $SD = 2.3$) attending a large public Canadian university were recruited for a 8 month study of personal goals. The questionnaires were administered through the survey software Qualtrics experimental software (Qualtrics, Inc., Salt Lake City, UT). The first survey (T1) was administered at the beginning of the academic year and assessed participants' three personal goals, goal motivation, intended effort, rating of goal feasibility, and baseline well-being measures, as well as personality inventories. Subsequent follow-up surveys assessed the degree to which participants experienced action crises for each of their three personal goals, goal progress, and symptoms of depression. A total of six surveys were administered throughout the academic year; for the scope of this study, we only considered the first three time points (beginning, middle, and end of the fall semester). Two personality inventories were administered mid–second semester (T4) to reduce participant burden in earlier surveys. After receiving the link for the survey, participants had 1 week to complete the survey at a time of their choosing. The completion rate for each of the surveys was T2 = 97.6% and T3 = 91.5%. The study was conducted in compliance with the University Research and Ethics Board, and participants received financial compensation ($50 CAD) for their time.

Measures

Goal Description. At T1, participants were asked to list three personal goals that they planned to pursue over the course of the academic year, using the instructions from Koestner et al. (2002). Examples of goals given to the students included "I want to run my first half marathon this year" and "I want to get a 3.5 GPA this semester."

Subjective Goal Feasibility. At T1, participants rated the subjective feasibility of each goal by answering one question about the goal's perceived difficulty ("How challenging do you think it will be to attain this goal?") and a question about the participant's perceived skills and resources ("To what extent do you feel you have the skills and resources necessary to attain this goal?"). All responses were made on a 7-point scale ranging from 1 (*not at all*) to 7 (*extremely*).

Intended Goal Effort. At T1, participants rated their intention to exert effort for each goal by answering the question "How hard do you intend to try at this goal?" on a 7-point scale ranging from 1 (*not at all*) to 7 (*extremely*). This item was adapted from Sheldon and Elliot (1999), which measured goal effort with a similarly worded item.

Autonomous and Controlled Goal Motivation. Participants were asked to rate their motivation for pursuing each goal at T1 using five items that assessed external, introjected, identified, integrated, and intrinsic reasons for goal pursuit (Sheldon & Kasser, 1998). All responses were made on a 7-point scale ranging from 1 (*not at all for this reason*) to 7 (*completely for this reason*). As in previous research, autonomous motivation was calculated as the mean of intrinsic, integrated, and identified ratings, whereas controlled motivation was calculated as the mean of external and introjected regulation (e.g., Koestner et al., 2008).

Action Crisis. At T2, we administered the six-item Action Crisis Scale (ACRISS) for each goal to measure action crisis severity (Brandstätter & Schüler, 2013). A native bilingual (German- and English-speaking) doctoral psychology student specializing in human motivation translated the original German version of the ACRISS to make it easily understandable for a North American sample (as shown below). The ACRISS assesses postdecisional goal conflict ("Lately I feel torn between continuing to strive for this goal and abandoning it"), setbacks ("So far my goal pursuit has been smooth and unproblematic"; reverse coded), implemental disorientation ("I often feel stuck and am unsure of how to continue pursuing this goal"), rumination ("I often ruminate about my goal"), disengagement impulses ("I have thought about giving up this goal"), and procrastination ("I find myself not having worked on my goal, despite my intention of doing so"). Participants rated the items on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Reliability was good, with Cronbach's alphas ranging from .71 to .76 for the three goals. This is consistent with other research, where the ACRISS has been found to have an alpha between .66 and .81 (Herrmann & Brandstätter, 2013).

Goal Progress. Goal progress was assessed at each follow-up using three items for each goal, a measure that has been used in previous research assessing student goal progress (e.g., Koestner, Powers, Carbonneau, Milyavskaya, & Chua, 2012); an example item is "I have made a lot of progress toward this goal." All ratings were made on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Reliability was excellent, with alphas ranging from .88 to .91 for the three goals.

Action-Control Scale. Action (vs. state) orientation was measured with an abbreviated 12-item Action-Control Scale (ACS-24; Kuhl, 1994) at T4. Since action orientation is thought to represent an enduring individual difference measure, we did not expect the later assessment to affect our results. Each item describes a potentially stressful situation (e.g., "When I know I must finish something soon") and has two answer options, one associated with action orientation (e.g., "I find it easy to get it done and over with") and one linked to state orientation (e.g., "I have to push myself to get started"). The forced choice enables participants to answer the questions with their more likely response in the presented situations based on their implicit self-

representation (Kuhl, 1994). The two subscales respectively assess failure (AOF) and decision-related (AOD) action orientation; we used six items for each. The scores were computed by adding the action-oriented answers for possible totals between 0 and 6. Our abbreviated items yielded an AOD $\alpha = .61$ and an AOF $\alpha = .63$. These internal consistency coefficients are lower than those typically observed with the full ACS, which has been found to have alphas between .69 and .84 (Herrmann & Brandstätter, 2013). However, we consider the alphas acceptable given the reduced number of items.

Big Five Inventory. To measure the personality constructs of Conscientiousness and Neuroticism, we administered the 44-item Big Five Inventory (BFI; John & Srivastava, 1999), which is a widely used, reliable, and valid measure of the Big Five. The BFI utilizes 44 short phrases based on the trait adjectives known to be prototypical of the Big Five to capture individual differences. Participants rated phrases such as "I am someone who worries a lot" (Neuroticism) and "I am someone who tends to be disorganized" (Conscientiousness, reversed) on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Goal Adjustment Tendencies. Goal disengagement and goal reengagement tendencies were assessed with the Goal Adjustment Capacity Scale (Wrosch et al., 2003) at T4. Participants responded to 10 items measuring how they usually react if they have to stop pursuing an important goal (5-point Likert-type scales anchored at 1 = *almost never true*, 5 = *almost always true*). Four items measured a person's tendency to disengage from unattainable goals (e.g., "It's easy for me to reduce my effort towards the goal"), and six items measured a person's tendency to reengage with new goals (e.g., "I seek other meaningful goals").

Symptoms of Depression. We used the Centre for Epidemiologic Studies Depression Scale Revised (CESD-R 10; Björgvinsson, Kertz, Bigda-Peyton, McCoy, & Aderka, 2013) to assess symptoms of depression at T1 and T3. The CESD-R 10 is a validated self-report measure of depression symptoms that focuses on the affectivity component of depressed mood (Björgvinsson et al., 2013). The scale includes 10 items such as "I could not get going" and "I was bothered by things that usually don't bother me," and it is measured on a 4-point Likert scale ranging from *rarely or none of the time (<1 day)* to *most or all the time (5–7 days)*. The depression symptoms score was computed by adding the 10 items.

RESULTS

Analytic Strategy

Correlations and hierarchical regressions were assessed with SPSS statistics software (Version 22). Mediation analyses were performed with the PROCESS macro for SPSS. (Hayes, 2012),

a computational tool that uses a bootstrapping procedure to test for indirect effects. Because each person named three goals, we conducted multilevel analyses with goals nested within person. The MIXED procedure in SPSS was used with goals nested within participants.

Preliminary Results

Data screening found the variables of interest to be normally distributed, making the variables suitable for regression analyses. Table 1 illustrates the descriptive statistics for and correlations between all of the key variables of this study. Overall, participants reported significantly higher autonomous motivation across their three goals ($M = 5.26$, $SD = 0.89$) compared to controlled motivation ($M = 3.18$, $SD = 1.12$), $t(424) = 28.26$, $p < .001$. As expected, participants made more progress on their three goals as the semester progressed, with less progress at T2 ($M = 3.34$, $SD = 1.01$) than at T3 ($M = 3.98$, $SD = 1.05$), $t(387) = -3.08$, $p < .01$. Participants' symptoms of depression also increased as the semester progressed, with less symptoms at baseline ($M = 10.113$, $SD = 4.86$) than at the end of the semester ($M = 12.25$, $SD = 5.66$), $t(382) = -7.28$, $p < .001$. The table illustrates that participants' mean autonomous motivation at the beginning of the semester was negatively associated with mid-semester action crisis severity, $r(413) = -.22$, $p < .01$, and positively associated with participants' goal progress at both mid-semester, $r(413) = .20$, $p < .01$, and the end of the semester, $r(388) = .14$, $p < .01$.

Conversely, participants' mean level of controlled motivation at the beginning of the semester was positively associated with levels of mid-semester action crisis severity, $r(413) = .30$, $p < .01$. Consistent with previous research, controlled goal motivation was not significantly associated with goal progress (Koestner et al., 2008). However, controlled goal motivation was positively associated with symptoms of depression at the end of the semester (controlling for baseline depression), $r(380) = .13$, $p < .01$.

Main Analyses

To examine how personality traits and goal motivation influenced the severity of average mid-semester action crises across three personal goals, we performed a three-step hierarchical regression. In the first step of the regression, we entered participants' two subscales of action orientation to replicate Herrmann and Brandstätter (2013); in the second step, we entered all novel personality traits that have been proposed as relevant candidates in the prediction of action crises (Conscientiousness, Neuroticism, goal disengagement, and reengagement capacity); and finally, in the third step, we entered participants' average autonomous and controlled goal motivation across three goals. At the first step of the regression, participants' failure-related action orientation ($\beta = -.14$, $t = -2.88$, $p < .05$) and decision-related action orientation ($\beta = -.23$, $t = -4.53$, $p < .01$) were both

Table 1 Descriptive Statistics for and Correlations Between the Major Study Variables

	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. T1 mean autonomous motivation	5.26 (0.89)														
2. T1 mean controlled motivation	3.18 (1.12)	−.13**													
3. Failure-related action orientation	2.25 (1.67)	.05	−.14**												
4. Decision-related action orientation	2.80 (1.71)	.13**	−.16**	.23**											
5. Neuroticism	3.16 (0.82)	−.13**	.24**	−.48**	−.27**										
6. Conscientiousness	3.55 (0.69)	.22**	−.21**	.00	.42**	−.18**									
7. Goal disengagement capacities	11.41 (3.24)	−.18**	.005	.22**	.00	−.15**	−.06								
8. Goal reengagement capacities	22.07 (3.80)	.11**	.006	.17**	.23**	−.20**	.20**	.33**							
9. T2 mean action crisis severity	3.70 (0.76)	−.22**	.30**	−.20**	−.26**	.33**	−.27**	−.02	−.07						
10. T3 goal progress	3.98 (1.05)	.14**	.00	.06	.24**	−.15**	.22**	−.06	.05	−.40**					
11. T1 depression symptoms	10.13 (4.87)	−.15**	.37**	−.26**	−.33**	.52**	−.29**	−.07	−.15**	.37**	−.16**				
12. T3 depression symptoms	12.25 (5.66)	−.08	.28**	−.27**	−.23**	.44**	−.22**	−.10	−.12**	.35**	−.28**	.44**			
13. Subjective goal feasibility	5.42 (0.59)	.32**	.06	−.006	.04	−.06	.14**	−.03	.13*	−.06	.02	−.11*	.02		
14. Intended effort	5.71 (0.73)	.46**	−.12	−.003	.21**	−.08	.30**	−.09	.13**	−.33**	.19**	−.19**	−.07	.41**	

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

negatively associated with mid-semester action crisis severity, replicating Herrmann and Brandstätter (2013). Together, the two subscales explained 8.6% of the variance, $F(2, 387) = 18.20$, $p < .001$. At the second step of the regression, Conscientiousness was also negatively associated with action crisis severity ($\beta = -.20$, $t = -3.72$, $p < .01$), whereas Neuroticism was positively associated with action crisis severity ($\beta = .26$, $t = 4.81$, $p < .01$). Both goal disengagement and reengagement capacity did not significantly contribute variance at the second step of the regression. Together, the second step of the regression explained an additional 9.3% of the variance, $F(4, 383) = 10.88$, $p < .001$. Finally, at the third step of the regression, autonomous and controlled motivation both significantly predicted an additional 4.8% of the variance of mid-semester action crisis severity, beyond all relevant personality traits, $F(2, 381) = 11.71$, $p < .001$. Autonomous motivation was negatively associated with action crisis severity ($\beta = -.12$, $t = -2.53$, $p = .012$), whereas controlled motivation was positively associated with action crisis severity ($\beta = .19$, $t = 3.92$, $p < .01$). In total, this model accounted for 21.1% of the variance associated with mid-semester action crisis severity. Importantly, the independent effects of autonomous and controlled motivation on action crisis severity remained significant after controlling for the influence of the trait action orientation, Conscientiousness, and Neuroticism.

Multilevel Modeling (MLM) Analyses. Having obtained evidence for the significant role of goal motivation in the development of action crises, we next sought to assess the within-person effects of motivation for predicting action crisis severity. According to Maas and Hox (2005), our sample was more than adequate to meet the requirements for power (these researchers recommend 50 or more Level 2 units [participants] for an unbiased estimation of the Level 1 and Level 2 variables in MLM).

First, using MLM, we estimated the proportion of within-person variance to the proportion of between-person variance in participants' experience of mid-semester action crises. The intraclass correlation coefficient (ICC) indicated that 12.9% of the total variance in action crises was accounted for by differences at the between-person level, whereas 87.1% of the total variance was accounted for by differences at the within-person level (between goals). We also established the proportion of variance in participants' autonomous goal motivation. The ICC indicated that 18.3% of the total variance in autonomous goal motivation was accounted for by differences between people, whereas 81.7% of the total variance was accounted for by differences in autonomous motivation between goals (within people). Meanwhile, the ICC for controlled goal motivation was a little higher, indicating that 25.6% of controlled goal motivation was accounted for by differences between people.

Next, we examined our hypothesis that goal-specific autonomous motivation would predict the extent of action crisis experienced on that goal. In order to examine the effects of autonomous motivation for each goal relative to a person's other goals, we person-mean-centered goal autonomous motivation
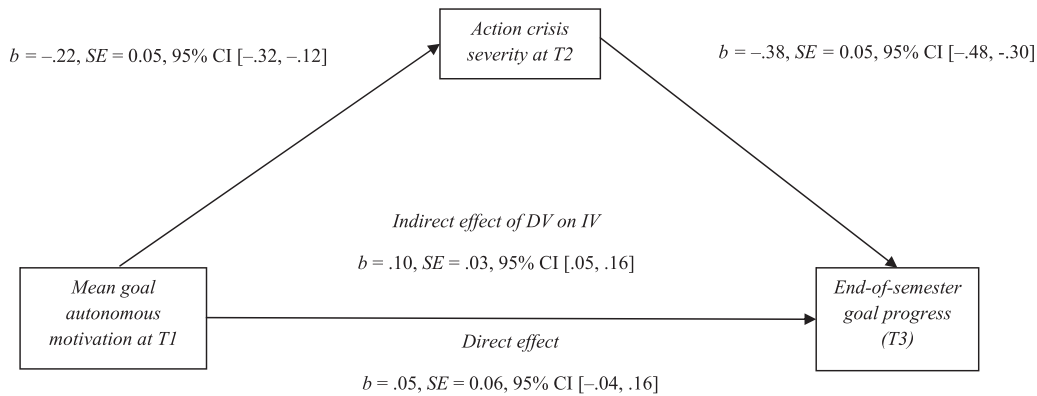
Action crisis
severity at T2

$b = -.22$, $SE = 0.05$, 95% CI [−.32, −.12] $b = -.38$, $SE = 0.05$, 95% CI [−.48, -.30]

Indirect effect of DV on IV

$b = .10$, $SE = .03$, 95% CI [.05, .16]

Mean goal
autonomous
motivation at T1

End-of-semester
goal progress
(T3)

Direct effect

$b = .05$, $SE = 0.06$, 95% CI [−.04, .16]

Figure 1 Direct and indirect effects of autonomous goal motivation on participants' end-of-semester goal progress, controlling for subjective goal feasibility. Total effect of DV on IV: $b = .15$, $SE = 0.05$, $t = 2.76$, $p < .05$, 95% CI [.04, .25].

(Nezlek, 2012) so that the value of each goal reflected the difference between that goal and the person's average autonomous motivation across goals. We entered person-centered autonomous goal motivation as a fixed predictor in the random-intercept-and-slope two-level mixed model with T2 action crises as the dependent variable in the model.[1] In order to contrast goal-specific autonomous motivation with trait-level Conscientiousness, Neuroticism, and participants' average tendency to set autonomous goals on the development of mid-semester action crises, we also entered these three variables as fixed predictors in the model. Person-centered autonomous goal motivation was negatively related to mid-semester action crises on that specific goal, $b = -.16$, $SE = 0.04$, $t = -4.59$, $p < .001$, 95% CI [−.23, − .09]. That is, people were less likely to experience a mid-semester action crisis for a more autonomous goal compared to their less autonomous goals. Results for mean autonomous motivation on action crises indicated that participants' general tendency to set autonomous goals was negatively related to action crisis severity, $b = -.12$, $SE = 0.04$, $t = -3.08$, $p < .01$, 95% CI [−.20, −.04]. Similarly, results for Conscientiousness revealed that this personality trait was negatively related to action crisis severity, $b = -.21$, $SE = 0.05$, $t = -4.11$, $p < .001$, 95% CI [−.32, −.11]. Finally, results for Neuroticism revealed that this trait was positively related to mid-semester action crisis severity, $b = .27$, $SE = 0.04$, $t = 6.12$, $p < .001$, 95% CI [.18, .35]. Thus, both within- and between-person differences in autonomous goal setting, as well as differences in Conscientiousness and Neuroticism, significantly contributed to the variance in predicting participants' action crisis severity. Within-person differences in controlled motivation did not predict action crisis severity, $b = .05$, $SE = 0.03$, $t = 1.64$, $p = .10$, 95% CI [−.01, .11].

Mediation Analyses. After establishing that autonomous goal motivation was negatively related to action crisis severity, making it a protective factor against experiencing action crises, we sought to examine how autonomous motivation and action crisis severity affected goal progress at the end of the semester.

Specifically, we hypothesized that T2 action crisis severity mediated the relationship between T1 autonomous motivation and T3 goal progress. We used the method outlined by Hayes (2012) to test this mediation model by estimating 95% confidence intervals of the indirect effect using bootstrap resampling (k = 10,000) procedures. The betas in the following mediation analyses reflect the standardized coefficients. In this mediation, we controlled for baseline subjective goal feasibility. Results from the mediation analysis showed that mean autonomous motivation was a significant predictor of mid-semester action crisis severity, $b = -.22$, $SE = 0.05$, $t = -4.43$, $p < .001$, 95% CI [−.32, −.12]. Mid-semester action crisis severity was a significant predictor of T3 goal progress, $b = -.38$, $SE = 0.05$, $t = -8.18$, $p < .001$, 95% CI [−.48, −.30], such that less severe action crises were associated with greater goal progress. Next, we examined the total, indirect, and direct effects. The total effect of autonomous motivation on end-of-semester goal progress was significant at $b = .15$, $SE = 0.05$, $t = 2.76$, $p < .05$, 95% CI [.04, .25]. This is considered significant, as the confidence interval does not straddle zero (Hayes, 2012). The indirect effect of T1 autonomous motivation on T3 goal progress through mid-semester action crisis severity was estimated to be (unstandardized) $b = 0.10$, $SE = .03$, *95% CI* [.05, .16], whereas the direct effect of autonomous motivation on goal progress over time was no longer significant, $b = .05$, $SE = 0.06$, $t = 1.16$, $p = .25$, *95% CI* [−.04, .16], suggesting full mediation. Together, these results support the hypothesis that action crisis severity mediates the relationship between autonomous goal motivation and goal progress over time (see Figure 1).

Next, we sought to examine the relationship between T1 mean controlled goal motivation, T2 action crisis severity, and T3 symptoms of depression. We hypothesized that T2 action crisis severity mediated the association between controlled motivation at the beginning of the semester and symptoms of depression at the end of the semester. Thus, we performed a second mediation analysis using the same bootstrap resampling procedures. To control for the effects of baseline depression
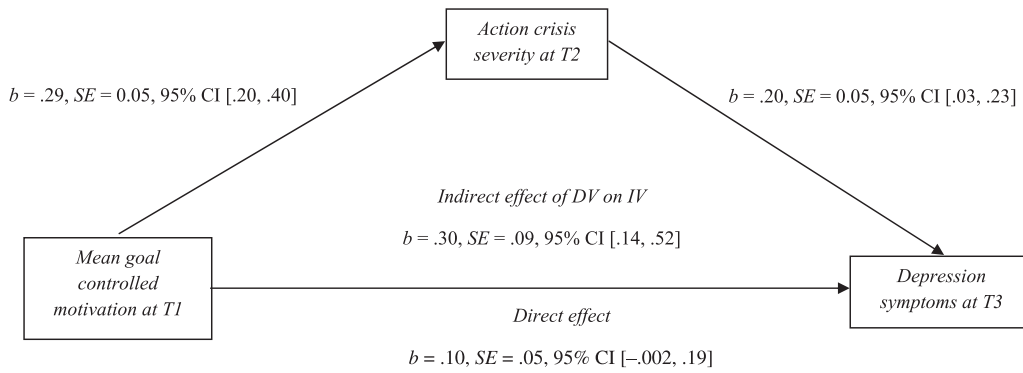
Figure 2 Direct and indirect effects of controlled goal motivation on participants' symptoms of depression, controlling for baseline symptoms of depression. Total effect of DV on IV: $b = .13$, $SE = 0.05$, $t = 2.63$, $p < .01$, 95% CI [.03, .23].

symptoms on our outcome variable, we entered T1 depression symptoms as a covariate in the model. Results from the mediation analysis showed that mean controlled motivation was a significant predictor of T2 action crisis severity, $b = .29$, $SE = 0.05$, $t = 5.99$, $p < .001$, 95% CI [.20, .40], and that T2 action crisis severity was a significant predictor of T3 symptoms of depression, $b = .20$, $SE = 0.05$, $t = 4.04$, $p < .001$, 95% CI [.10, .29]. The total effect of controlled motivation on T3 symptoms of depression was significant at $b = .13$, $SE = 0.05$, $t = 2.63$, $p < .01$, 95% CI [.03, .23]. The indirect effect of controlled motivation on depression symptoms through action crisis severity was (unstandardized) $b = .30$, $SE = 0.09$, 95% CI [14, .52]. Finally, the direct effect of controlled motivation on symptoms of depression reduced to $b = .10$, $SE = .05$, $t = 1.94$, $p = .053$, 95% CI [−.002, .19] analysis, suggesting full mediation. Together, these results support our hypothesis that mid-semester action crisis severity mediates the relationship between controlled motivation and symptoms of depression (see Figure 2).

Finally, we sought to test intended goal effort as a mechanism through which autonomous motivation may lead to decreased action crisis severity. In this mediation, we controlled for baseline subjective goal feasibility. Results from the mediation

analysis showed that mean autonomous motivation was a positive predictor of intended effort, $b = .45$, $SE = .04$, $t = 10.59$, $p < .001$, 95% CI [.37, .54], and that intended effort negatively predicted the severity of mid-semester action crises, $b = −.32$, $SE = .06$, $t = −5.78$, $p < .001$, 95% CI [−.43, −.21]. The total effect of autonomous motivation on action crisis severity was significant at $b = −.22$, $SE = .05$, $t = −4.34$, $p < .01$, 95% CI [−.32, −.12]. The indirect effect of autonomous motivation on action crisis severity through intended effort was estimated to be (unstandardized) $b = −.12$, $SE = .02$, 95% CI [−.17, −.07], whereas the direct effect of autonomous motivation on action crisis severity was no longer significant, $b = −.09$, $SE = .05$, $t = −1.88$, $p = .06$, 95% CI [−.20, .004], suggesting full mediation. Together, these results support the hypothesis that intended goal effort acts as a mediator between autonomous goal motivation and action crisis severity (see Figure 3).

DISCUSSION

The primary objective of the present study was to examine the independent predictive roles of autonomous and controlled motivation in the development of action crises, thereby
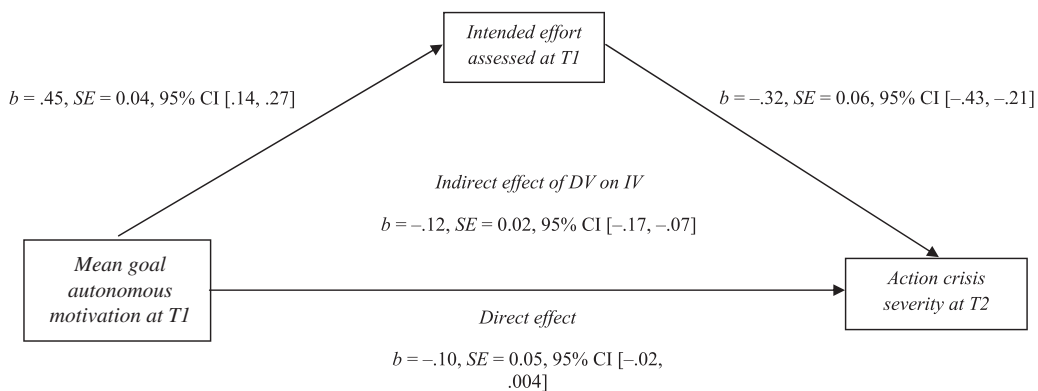

Figure 3 Direct and indirect effects of autonomous motivation on mid-semester action crises, controlling for subjective goal feasibility. Total effect of DV on IV: $b = −.22$, $SE = 0.05$, $t = −4.34$, $p < .01$, 95% CI [−.32, −.12].

elaborating on Herrmann and Brandstätter's (2013) discovery of the negative relationship between goal self-concordance and action crises. While previous research has highlighted the importance of trait-level action orientation in predicting the severity and resolution of action crises, this research considered the state-level predictor of motivation at both the within- and between-person levels. The finding that action crises are determined, in part, by autonomous and controlled goal motivation has important implications for research interventions that aim to prevent these states of inertia and internal conflict. While it may prove difficult or impossible to intervene at a trait level, future interventions targeted at internalizing goal motivation may be a fruitful way to protect individuals from experiencing action crises in personal goal pursuit.

Our results indicate that autonomous motivation for personal goals represents an independent protective factor that shields people from developing severe action crises in personal goal pursuit. In other words, those individuals who tended to set more autonomous goals at the beginning of the semester experienced less severe action crises, on average, than individuals who tended to set less autonomous goals. This is consistent with Herrmann and Brandstätter's (2013, study 3) finding that goal self-concordance was negatively associated with experiencing an action crisis. Results from our study also showed the benefits of autonomous motivation accrued at the within-person level of analysis. MLM revealed that individuals were less likely to experience a severe action crisis on their most autonomous goal, relative to their other goals. Consistent with previous research (Werner et al., 2016), our within-person analyses revealed 81.7% variability in autonomous goal motivation and 87.1% within-person variability in action crises. This suggests the same individual generally tends to pursue different goals for very different reasons, and that the extent to which he or she encounters an action crisis varies widely from goal to goal. These findings lend support to our rationale of looking beyond enduring individual difference measures in predicting people's susceptibility to the experience of action crises in personal goal pursuit.

There are several reasons why we suspect autonomous motivation shows a protective effect of shielding people from experiencing action crises. First, autonomous goals are more internalized and are thus likely to reflect a person's core values, interests, and desires (Ryan, 1995). This enmeshment of autonomous goals with a person's self-concept and sense of identity might make these goals more resilient to difficulties and setbacks. Autonomous goals are also more likely to provide consistent energization (Gollwitzer, 1990) and decreased attraction to goal-disruptive temptations (Milyavskaya et al., 2015), making decisional conflicts less likely to set in. We explicitly tested the mechanism of intended effort in a mediation model, finding that autonomous motivation was positively associated with the intention to exert greater effort on the goal, which was in turn negatively associated with mid-semester action crisis severity. The intention to exert greater effort on a goal fully mediated the relationship between autonomous motivation and action crisis severity. This intention associated with autonomous goal pursuit

may indicate a psychological readiness to commit resources to a goal, withstand goal-related challenges, and suppress urges that may lead to a decisional conflict, such as indulging temptations or distractions. Another possible explanation for this effect that we did not test here may be that autonomous goals are perceived as easier to pursue relative to other goals (Werner et al., 2016). Using multilevel structural equation modeling, Werner et al. (2016) demonstrated that subjective ease mediated the relationship between motivation and goal progress, such that people were more likely to successfully accomplish self-concordant goals because pursuing those goals was perceived as being more effortless.

Our results also suggest that controlled motivation represented an independent risk factor for developing mid-semester action crises, after controlling for the personality traits of action orientation, Neuroticism, Conscientiousness, and goal adjustment capacity. Controlled goals, by their definition, represent a conflict between external demands or internal pressures and inherent psychological needs and growth tendencies (Ryan, 1995). The partial or incomplete integration of controlled goals seems to make them especially susceptible to obstacles and temptations when setbacks and difficulties in the goal-striving process occur (Milyavskaya et al., 2015). Interestingly, while controlled motivation represented a predictive factor for action crisis severity at the between-person level, within-person differences in controlled goal motivation did not contribute to the predictive variance of action crises. Although future research is needed to understand this finding, we can speculate that controlled motivation operates in a more inconsistent fashion than autonomous motivation because it is largely governed by external contingencies determined by the environment rather than stable internal characteristics of the individual (e.g., values).

Although our study's primary focus was to investigate the independent predictive effects of autonomous and controlled motivation in explaining action crisis severity, another novel contribution of our study was establishing the roles of Conscientiousness and Neuroticism in determining people's susceptibility to action crises. Indeed, Conscientiousness was associated with experiencing less severe mid-semester action crises, whereas Neuroticism was associated with experiencing more severe action crises, beyond action orientation. These findings are not surprising, given that Conscientiousness has been associated with industriousness and self-control (Roberts, Chernyshenko, Stark, & Goldberg, 2005), as well as advanced academic and workplace performance (Higgins, Peterson, Pihl, & Lee, 2007). The finding that Neuroticism was linked to more severe action crises is also consistent with previous research. For example, Neuroticism has been associated with enhanced rumination and worry (Muris, Roelofs, Rassin, Franken, & Mayer, 2005), which are defining features of an action crisis (Brandstätter & Schüler, 2013). As predicted, we did not find an association of goal adjustment capacity with action crises severity, suggesting that people's ability to disengage from unattainable goals and reengage with new goals is not a relevant predictor of action crisis severity.

The current study also considered some consequences associated with the experience of action crisis in goal pursuit. Specifically, we tested two mediation pathways associated with the independent effects of autonomous and controlled goal motivation. Our first mediation model examined the role of action crises in explaining the relationship between baseline autonomous motivation and end-of-semester goal progress. Averaging across participants' three goals, we found that mid-semester action crisis severity fully mediated the relationship between autonomous motivation and goal progress over the course of a semester. This result replicates Sheldon and Elliott's (1998) well-established finding that increased autonomous motivation predicts enhanced goal progress over time, but it sheds light on a novel mechanism, action crises, to explain the facilitative effects of autonomous motivation on goal progress.

In a second mediation model, we found support for action crisis severity mediating the relationship between controlled motivation for goals at the beginning of the semester and depressive symptoms at the end of the semester. Controlled motivation has been notorious in showing weak or variable effects on goal progress (Koestner et al., 2008), but in the present study, we considered the role of controlled motivation and ill-being. Previous research provides some preliminary support for the association between controlled motivation and ill-being (Ryan et al., 1993). For example, in a study of athlete burnout, Jowett, Hill, Hall, and Curran (2013) found that controlled motivation for sport was positively associated with athlete burnout characterized as "perceived emotional and physical exhaustion" (p. 3). Although previous research has linked action crises with decreased life satisfaction and low positive affect, this is the first study to consider the association between action crises and symptoms of depression. The present investigation also has important implications for self-concordance research. While SDT researchers have been in agreement about the positive impact of autonomous motivation on well-being and goal progress, the negative sequelae of controlled motivation in goal pursuit have remained somewhat nebulous (e.g., Koestner et al., 2008). As such, this finding proposes a novel pathway through which controlled goal motivation promotes poor adjustment outcomes, such as increased symptoms of depression.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Despite the contribution of the present research to the understanding of the development of action crises, it is important to underscore some limitations. In the present study, we focused on emerging adults attending university, but the role of motivation in action crises should be replicated in populations of different cultures and should consider individuals experiencing action crises at different life stages. Indeed, the study was conducted on a sample of predominantly female students at a Canadian university. However, much of the existing action crisis research has been conducted with Central European participants (e.g., Herrmann & Brandstätter, 2013), so we are extending this research

by examining a North American sample (57% Caucasian, 32% Asian). Since the present study used a prospective longitudinal design, it precludes firm conclusions about causality. Future studies are also needed to hone our understanding of the processes and dynamics that can play a role in the associations between goal motivation and action crises. It is unclear whether there are qualitative differences in the action crises experienced for autonomous goals and controlled goals, and whether these action crises are resolved in a similar manner. Indeed, this study did not assess whether participants' action crises were resolved through perseverance or resulted in goal disengagement. Since autonomous goals represent a person's values and enduring interests, one could hypothesize that experiencing a decisional conflict about an autonomous goal might come at a greater emotional cost than reevaluating an instrumental, controlled goal that is further removed from one's sense of authentic self and identity. However, one could also make the reverse argument that sense of choice and volition associated with autonomous goal pursuit might give rise to a more flexible approach when goal pursuit becomes problematic, facilitating a timely resolution of action crises without taking a toll on health and well-being. Future research could also explore whether the two regulatory styles for goal pursuit are associated with different action crisis triggers. For example, perhaps autonomous goals are more susceptible to an action crisis triggered by an emergent goal alternative that captivates curiosity and interest (redirecting volitional resources), whereas controlled goals may be more susceptible to action crises when the goal pursuit becomes difficult or problematic.

Future research is also warranted to consider contextual factors, such as goal support, that may moderate the relationship between goal motivation and the development of action crises. SDT suggests that autonomy support (i.e., taking another's perspective, acknowledging feelings, and encouraging self-initiation) facilitates the internalization of autonomous self-regulation and associated behavior change. Perceived autonomy support has been repeatedly associated with greater internalized motivation, goal persistence, and goal progress (Koestner, Powers, Milyavskaya, Carbonneau, & Hope, 2015; Powers, Koestner, & Zuroff, 2007).

As such, one could hypothesize that the provision of autonomy support may shield participants from action crises both directly and indirectly by (a) providing the validating, growth-oriented support that may help individuals resolve an action crisis and (b) helping individuals internalize their goal motivation. Thus, future research might benefit from considering the social context of action crises as they arise in personal goal pursuit.

CONCLUSIONS

In sum, this study explored the motivational antecedents and consequences of experiencing action crises in personal goal pursuit. Our findings introduce autonomous and controlled motivation as independent predictors of action crisis severity, beyond known personality-level predictors (action orientation) and novel

personality-level predictors (Neuroticism and Conscientiousness). The results from this study suggest that autonomous motivation operates as an independent shielding factor for action crises, whereas controlled motivation may represent an independent risk factor for developing action crises in personal goal pursuit. Furthermore, MLM analyses revealed that autonomous motivation is a significant predictor of action crisis severity at both the within- and between-person levels of analysis, controlling for Neuroticism and Conscientiousness. Finally, we found that action crisis severity mediates both the relationship between autonomous motivation and goal progress, and the relationship between controlled motivation and symptoms of depression. We also tested intended effort as a mechanism to explain the negative relationship between autonomous motivation and action crisis severity. Together, this research enhances our understanding of the motivational and personality factors that can impact the development of action crises. In turn, this research examines how action crises affect goal progress and symptoms of depression.

Declaration of Conflicting Interests

Funding

Note

1. We also tested the random intercept model, but it yielded a slightly poorer fit as evaluated by the Akaike information criterion.

References

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, **84**, 191–215.

Björgvinsson, T., Kertz, S. J., Bigda-Peyton, J. S., McCoy, K. L., & Aderka, I. M. (2013). Psychometric properties of the CES-D-10 in a psychiatric sample. *Assessment*, **20**, 429–436.

Brandstätter, V., & Herrmann, M. (2016). Goal disengagement in emerging adulthood The adaptive potential of action crises. *International Journal of Behavioral Development*, **40**(2), 117–125.

Brandstätter, V., Herrmann, M., & Schüler, J. (2013). The struggle of giving up personal goals: Affective, physiological, and cognitive consequences of an action crisis. *Personality and Social Psychology Bulletin*, **39**, 1668–1682.

Brandstätter, V., & Schüler, J. (2013). Action crisis and cost–benefit thinking: A cognitive analysis of a goal-disengagement phase. *Journal of Experimental Social Psychology*, **49**, 543–553.

Carver, C. S., & Scheier, M. F. (1981). The self-attention-induced feedback loop and social facilitation. *Journal of Experimental Social Psychology*, **17**, 545–568.

Costa, P. T., & McCrae, R. R. (1992). Four ways five factors are basic. *Personality and Individual Differences*, **13**, 653–665.

Deci, E. L., & Ryan, R. M. (2012). Motivation, personality, and development within embedded social contexts: An overview of self-determination theory. In R. M. Ryan (Ed.), *The Oxford handbook of motivation* (pp. 85–107). New York, NY: Oxford University Press.

Downie, M., Koestner, R., Horberg, E., & Haga, S. (2006). Exploring the relation of independent and interdependent self-construals to why and how people pursue personal goals. *Journal of Social Psychology*, **146**, 517–531.

Gaudreau, P., Carraro, N., & Miranda, D. (2012). From goal motivation to goal progress: The mediating role of coping in the self-concordance model. *Anxiety, Stress & Coping*, **25**, 507–528.

Gollwitzer, P. M. (1990). Action phases and mind-sets. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 53–92). New York: Guilford Press.

Gollwitzer, P. M. (1996). The volitional benefits of planning. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action* (pp. 287–312). New York: Guilford Press.

Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable moderation, mediation, and conditional process modeling [White paper]. Retrieved from http://www.afnayes.com/public/process2012.pdf.

Heckhausen, J., Wrosch, C., & Schulz, R. (2010). A motivational theory of life-span development. *Psychological Review*, **117**, 32–60.

Herrmann, M., & Brandstätter, V. (2013). Overcoming action crises in personal goals—Longitudinal evidence on a mediating mechanism between action orientation and well-being. *Journal of Research in Personality*, **47**, 881–893.

Herrmann, M., & Brandstätter, V. (2015). Action crises and goal disengagement: Longitudinal evidence on the predictive validity of a motivational phase in goal striving. *Motivation Science*, **1**, 121–136.

Higgins, D. M., Peterson, J. B., Pihl, R. O., & Lee, A. G. (2007). Prefrontal cognitive ability, intelligence, Big Five personality, and the prediction of advanced academic and workplace performance. *Journal of Personality and Social Psychology*, **93**, 298–319.

John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (pp. 102–138). New York, NY: Guilford Press.

Jowett, G. E., Hill, A. P., Hall, H. K., & Curran, T. (2013). Perfectionism and junior athlete burnout: The mediating role of autonomous and controlled motivation. *Sport, Exercise, and Performance Psychology*, **2**, 48–61.

Judge, T. A., Bono, J. E., Erez, A., & Locke, E. A. (2005). Core self-evaluations and job and life satisfaction: The role of self-concordance and goal attainment. *Journal of Applied Psychology*, **90**, 257–268.

Kelly, R. E., Mansell, W., & Wood, A. M. (2011). Goal conflict and ambivalence interact to predict depression. *Personality and Individual Differences*, **50**, 531–534.

Klinger, E. (1977). *Meaning and void: Inner experience and the incentives in people's lives*. Minneapolis: University of Minnesota Press.

Koestner, R. (2008). Reaching one's personal goals: A motivational perspective focused on autonomy. *Canadian Psychology/Psychologie canadienne*, **49**, 60–67.

Koestner, R., Lekes, N., Powers, T. A., & Chicoine, E. (2002). Attaining personal goals: Self-concordance plus implementation intentions equals success. *Journal of Personality and Social Psychology*, **83**, 231–244.

Koestner, R., Otis, N., Powers, T. A., Pelletier, L., & Gagnon, H. (2008). Autonomous motivation, controlled motivation, and goal progress. *Journal of Personality*, **76**, 1201–1230.

Koestner, R., Powers, T. A., Carbonneau, N., Milyavskaya, M., & Chua, S. N. (2012). Distinguishing autonomous and directive forms of goal support: Their effects on goal progress, relationship quality, and subjective well-being. *Personality and Social Psychology Bulletin*, **38**, 1609–1620.

Koestner, R., Powers, T. A., Milyavskaya, M., Carbonneau, N., & Hope, N. (2015). Goal internalization and persistence as a function of autonomous and directive forms of goal support. *Journal of Personality*, **83**, 179–190.

Koletzko, S. H., Herrmann, M., & Brandstätter, V. (2015). Unconflicted goal striving: Goal ambivalence as a mediator between goal self-concordance and well-being. *Personality and Social Psychology Bulletin*, **41**, 140–156.

Kuhl, J. (1994). Action versus state orientation: Psychometric properties of the Action Control Scale (ACS-90). In J. Kuhl & J. Beckmann (Eds.), *Volition and personality: Action versus state orientation* (pp. 47–56). Seattle: Hogrefe & Huber.

Kuhl, J., & Beckmann, J. (Eds.). (1994). *Volition and personality: Action versus state orientation*. Seattle: Hogrefe & Huber.

Kuhl, J., & Fuhrmann, A. (1998). Decomposing self-regulation and self-control: The Volitional Components Inventory. In Heckhausen J., Dweck C. S. (Eds.), *Motivation and self-regulation across the life span* (pp.15–49). New York, NY: Cambridge University Press.

Kuhl, J., & Goschke, T. (1994). A theory of action control: Mental subsystems, modes of control, and volitional conflict-resolution strategies. In J. Kuhl & J. Beckmann (Eds.), *Volition and personality: Action versus state orientation* (pp. 93–124). Seattle: Hogrefe & Huber.

Lykken, D., & Tellegen, A. (1996). Happiness is a stochastic phenomenon. *Psychological Science*, **7**, 186–189.

Maas, C. J., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology*, **1**, 86–92.

Milyavskaya, M., Inzlicht, M., Hope, N., & Koestner, R. (2015). Saying "no" to temptation: Want-to motivation improves self-regulation by reducing temptation rather than by increasing self-control. *Journal of Personality and Social Psychology*, **109**, 677–693.

Muris, P., Roelofs, J., Rassin, E., Franken, I., & Mayer, B. (2005). Mediating effects of rumination and worry on the links between neuroticism, anxiety and depression. *Personality and Individual Differences*, **39**, 1105–1111.

Nezlek, J. B. (2012). Multilevel modeling analyses of diary-style data. In M. R. Mehl, & T. S. Conner (Eds.), *Handbook of research methods for studying daily life* (pp. 357–383). New York, NY: The Guilford Press.

Nolan, S. A., Roberts, J. E., & Gotlib, I. H. (1998). Neuroticism and ruminative response style as predictors of change in depressive symptomatology. *Cognitive Therapy and Research*, **22**, 445–455.

Powers, T. A., Koestner, R., & Zuroff, D. C. (2007). Self-criticism, goal motivation, and goal progress. *Journal of Social and Clinical Psychology*, **26**, 826–840.

Roberts, B. W., Chernyshenko, O. S., Stark, S., & Goldberg, L. R. (2005). The structure of conscientiousness: An empirical investigation based on seven major personality questionnaires. *Personnel Psychology*, **58**, 103–139.

Romero, E., Villar, P., Luengo, M. Á., & Gómez-Fraguela, J. A. (2009). Traits, personal strivings and well-being. *Journal of Research in Personality*, **43**, 535–546.

Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality*, **63**, 397–427.

Ryan, R. M., Rigby, S., & King, K. (1993). Two types of religious internalization and their relations to religious orientations and mental health. *Journal of Personality and Social Psychology*, **65**, 586–596.

Sheldon, K. M. (2014). Becoming oneself: The central role of self-concordant goal selection. *Personality and Social Psychology Review*, **18**, 349–365.

Sheldon, K. M., & Elliot, A. J. (1998). Not all personal goals are personal: Comparing autonomous and controlled reasons as predictors of effort and attainment. *Personality and Social Psychology Bulletin*, **24**, 546–557.

Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology*, **76**, 482– 497.

Sheldon, K. M., & Houser-Marko, L. (2001). Self-concordance, goal attainment, and the pursuit of happiness: Can there be an upward spiral? *Journal of Personality and Social Psychology*, **80**, 152– 165.

Sheldon, K. M., & Kasser, T. (1998). Pursuing personal goals: Skills enable progress but not all progress is beneficial. *Personality and Social Psychology Bulletin*, **24**, 1319–1331.

Soenens, B., Berzonsky, M. D., Dunkel, C., Papini, D., & Vansteenkiste, M. (2011). Are all identity commitments created equally? The importance of motives for late adolescents' personal adjustment. *International Journal of Behavioral Development*, **35**, 358–369.

Werner, K. M., Milyavskaya, M., Foxen-Craft, E., & Koestner, R. (2016). Some goals just feel easier: Self-concordance leads to goal progress through subjective ease, not effort. *Personality and Individual Differences*, **96**, 237–242.

Wrosch, C., Scheier, M. F., & Miller, G. E. (2013). Goal adjustment capacities, subjective well-being, and physical health. *Social and Personality Psychology Compass*, **7**, 847–860.

Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., & Carver, C. S. (2003). Adaptive self-regulation of unattainable goals: Goal disengagement, goal reengagement, and subjective well-being. *Personality and Social Psychology Bulletin*, **29**, 1494–1508.