



Owning the plan: The role of autonomous if-then planning for goal progress and action crisis[☆]

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ABSTRACT

Autonomous motivation arising from a sense of truly valuing or enjoying one's pursuits ("wanting to do it") is associated with goal progress and well-being. Likewise, setting an implementation intention in the form of an if-then plan can lead to improved goal outcomes. We introduce the concept of autonomous motivation for if-then plans and study its association with plan enactment, goal progress, and action crisis severity (goal conflict) in the context of a goal study ($N = 379$). Results suggest that autonomous goal motivation is positively related to autonomous if-then plan motivation. Moreover, analyses reveal a positive synergistic effect of autonomous if-then plan motivation and frequency of plan enactment on goal progress and action crises: Goal progress was boosted, and action crises were minimized with higher autonomous if-then plan motivation and greater frequency of plan enactment. Implications of these results for promoting goal striving are discussed.

1. Introduction

Motivation psychologists have long agreed that succeeding with goals is not just about the content and structure of the goal, but the reasons *why* the goal is being pursued in the first place (Ryan & Deci, 2017). Does the goal cohere with personal values and seem interesting and meaningful (autonomous motivation) or is the goal being pursued because of external demands and an internal sense of pressure and obligation (controlled motivation)? While the intensity of motivation may initially be equally high for both forms of motivation, their differing quality prompts different modes of regulation, leading to distinct outcomes over time (Koestner et al., 2008; Ryan & Deci, 2017). Autonomous motivation derived from a sense of valuing or enjoying one's pursuits ("wanting to do it") is associated with increased progress, perseverance, and well-being (Judge et al., 2005; Sheldon & Elliot, 1998; Sheldon & Houser-Marko, 2001), and minimizes internal conflicts about abandoning the goal (action crisis) (Holding et al., 2017, 2021).

Given that the reasons underlying goal pursuit have significant consequences for goal outcomes such as goal progress and action crises, we ask here whether the benefits of autonomous motivation extend to the reasons underlying implementation intentions. Implementation

intentions take the format of "if-then" plans: "If situation X is encountered, then I will perform behaviour Y", linking critical situations (if-part) with a goal-directed response (then-part) (Gollwitzer & Brandstatter, 1997). Furnishing goals with specific if-then plans enhances goal outcomes (Bieleke et al., 2021; Gollwitzer & Sheeran, 2006). By linking the desired behaviors with specific situational cues, implementation intentions facilitate automatized responding that is not as cognitively demanding as reflective decision making about when, where, and how to behave to accomplish one's goals (Gollwitzer & Brandstatter, 1997).

However, little research has examined whether individuals harbour autonomous motivation for their if-then plans, and whether this impacts goal outcomes beyond goal motivation. The same way a person can set a running goal because she enjoys the activity and values an active lifestyle (autonomous motivation) rather than because she feels pressure to maintain a slim physique (controlled motivation), we suggest here that a person may also feel varying degrees of autonomous motivation about their plan to pursue the running goal. While for some their if-then plan may seem enjoyable, interesting, or coherent with personal values, for others, this kind of plan may be the result of an internal sense of pressure or set at the behest of another person. We expect participants' autonomous if-then plan motivation will be positively associated with goal

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progress and negatively associated with action crisis severity, even when accounting for goal motivation.

1.1. Autonomous motivation

Our central question is whether there is an association between the motivation underlying an if-then plan and goal progress, beyond motivation for pursuing the goal. We ground the idea of motivation to enact an if-then plan in conceptualizations specified by self-determination theory (SDT) (Ryan & Deci, 2017). SDT makes an important distinction between autonomous and controlled reasons for pursuing one's goals. Autonomous motivation is comprised of intrinsic, integrated, or identified reasons (Ryan & Deci, 2017). *Intrinsic* goals are pursued out of interest and enjoyment, *integrated* goals are pursued because they are congruent with the person's larger value system, and *identified* goals are pursued because their outcomes are perceived as important and meaningful (Ryan & Deci, 2017). Autonomous motivation is contrasted with controlled motivation which is comprised of external and introjected reasons for pursuing a goal. Goal pursuit is *externally* regulated when the main reason for pursuit is receiving rewards or avoiding punishments from others (Ryan & Deci, 2017). Goal pursuit is regulated via *introduction* when the individual feels internal pressure, guilt, or shame to pursue the goal (Ryan & Deci, 2017).

Though early SDT studies aggregated autonomous and controlled motivations into a self-concordance index, we heed recent calls to examine them separately, since they have different effects on goal progress and well-being (Judge et al., 2005; Koestner et al., 2008). For example, autonomous motivation is consistently associated with better goal attainment (Koestner et al., 2008; Milyavskaya et al., 2015). This is because autonomous goals result in greater effort (Sheldon & Elliot, 1998) and are associated with fewer obstacles (Milyavskaya et al., 2015). Autonomous motivation also shields individuals from action crises in goal pursuit (Holding et al., 2017). An action crisis is a decisional conflict that sometimes arises when a person encounters setbacks and difficulties with their goal. The person feels deeply torn between investing further versus disengaging from the goal and cutting losses (Brandstätter et al., 2013). This decisional conflict often takes weeks or months to resolve and is associated with significant costs to mental and physical health, such as increased symptoms of depression (Holding et al., 2017), hair cortisol (Holding et al., 2021), and symptoms of ill-health (Holding et al., 2021). Given the evidence that autonomous goals are associated with greater goal progress and less action crises, we ask whether if-then plans are more beneficial if they are internalized (i. e., in line with personal values, perceived as interesting and enjoyable).

1.2. Autonomous motivation and if-then plans

People who furnish their goals with if-then plans are significantly more successful (Gollwitzer & Sheeran, 2006). This effect has been demonstrated in assigned goals such as taking vitamins or exercising (Gollwitzer & Sheeran, 2006) and self-generated goals (Koestner et al., 2006). In an experimental study Koestner et al. (2006) found that administering if-then plan instructions in an autonomy-supportive manner (e.g., by acknowledging the person's perspective and emphasizing choice) facilitated goal progress compared to a condition where instructions about the if-then plan were delivered in a controlling manner (e.g., by using pressuring language and conveying perfectionist standards), even when accounting for baseline effects of goal motivation. Building on this research, we aimed to examine whether if-then plans that were crafted without specific autonomy-supportive instructions still varied in terms of their underlying motivation, and what the associations with goal progress and action crises were.

1.3. Plan enactment

Presumably, even the most thoughtful plans are of limited utility if

they are not put into action. We thus measured plan enactment which was operationalized as the frequency with which plans were implemented when encountering obstacles in goal pursuit. We hypothesized that the positive effects of autonomous if-then plans on maximizing goal progress and minimizing action crisis should be enhanced when these plans were enacted more frequently. In sum, we expected that frequently enacted plans high in autonomous motivation would carry the most benefits with regards to maximizing goal progress and minimizing action crises, compared to frequently enacted plans low in autonomous motivation.

2. The present study

The present study evaluated the associations between autonomous goal motivation, if-then plan motivation, and frequency of plan enactment with regards to goal progress and action crisis severity in a sample of students pursuing personal goals over the course of an academic semester. In line with the hierarchical model of motivation which posits that motivation on one level of specificity is positively associated with motivation on a higher level of specificity (Vallerand, 2000), we hypothesized that autonomous goal motivation (lower level of specificity) would be positively associated with autonomous if-then plan motivation (higher level of specificity). Further, extrapolating from the experimental findings of Koestner et al. (2006), we hypothesized that autonomous motivation for if-then plans would be positively associated with plan enactment and goal progress and negatively associated with action crisis severity. Moreover, given the possibility of a synergistic positive effect of autonomous plan motivation and frequent plan enactment, we expected a steeper increase of goal progress and decline of action crisis severity for frequency of enacting highly autonomous if-then plans than for frequency of enacting low autonomous if-then plans.

3. Methods

3.1. Participants

379 university students (14.2 % male; 51.2 % White, 31.7 % Asian, 4.5 % Latino, 2.1 % Black, and 0.8 % Native/First Nations) from a large North American University participated in an online study on personal goals and well-being at the beginning of an academic semester (T1), with attrition rates of 6 % mid-semester (T2), and 12 % at the end-of-semester (T3).¹ Ages ranged from 16 to 43 ($M = 20.4$, $SD = 3.2$). Compensation was up to \$50 CAD if participants completed each survey.

3.2. Procedure

Ethical approval was obtained at a large North American university. Participants were recruited via flyers distributed across campus. Once participants emailed the lab and answered screening questions, they received a copy of the informed consent form. Consenting participants completed the first survey hosted on Qualtrics (T1). Screening criteria included being proficient in English, not having participated in the lab's goal study before, and being a full-time student registered at the university.

This study was conducted from September 2018 to May 2019. For the present investigation we focused on the start of the semester (T1), mid-semester (T2), and the end of the semester (T3). The first survey (T1) asked participants to list three personal goals for the academic year, with the same instructions outlined in Koestner et al.' (2002) study (see measures). Baseline motivation for each personal goal was assessed. Due to space constraints, we instructed participants to generate an if-then

¹ This sample was also used in Avery et al. (2023). Participants completed additional measures as part of a larger data collection effort that were not the focus of this investigation.

plan for their first goal at (T1) and their second goal at (T2). At (T3) participants rated the motivation underlying their if-then plan, how frequently they enacted their if-then plan, goal progress, and severity of action crisis. See Fig. 1 for the study design.

3.3. Measures

3.3.1. Personal goals

At the start of the semester (T1), participants were prompted to describe three personal goals they would work toward over the academic year using instructions adapted from Koestner et al. (2002). For the present investigation we focus on goal 1 and 2 for which participants generated an if-then plan.

3.3.2. If-then plan

For goals 1 and 2, we instructed participants to generate an if-then plan with instructions adapted from the MCII strategy (e.g., Adriaanse et al., 2010). See Supplementary Material.

3.3.3. Autonomous goal motivation

Participants were prompted to rate their autonomous motivation for each goal at T1 using three items that measured intrinsic, integrated, and identified motivation (Sheldon & Elliot, 1998). Participants were asked ‘To what extent are you enacting this goal for the following reasons’, followed by prompts “Because of the fun and enjoyment which the goal will provide you—the primary reason is simply your interest in the experience itself.” (intrinsic); “Because it represents who you are and reflects what you value most in life.” (integrated), and “Because you really believe that it is an important goal to have—you endorse it freely and value it wholeheartedly” (identified). Ratings were on a 7-point Likert scale from 1 “not at all for this reason” to 7 “completely for this reason”. Autonomous motivation was measured by averaging intrinsic, integrated and identified items (Koestner et al., 2008).

3.3.4. Autonomous if-then plan motivation

Participants were prompted to rate their autonomous motivation for each if-then plan at T3 using two items that measured intrinsic and identified motivation (Sheldon & Elliot, 1998). Participants were asked ‘To what extent are you enacting this if-then plan for the following

reasons’, followed by prompts “Because it is fun and interesting” (intrinsic) and “Because it is meaningful and important to me” (identified). Responses were measured on a slider scale from 0 “not at all” to 100 “completely”. Autonomous if-then plan motivation was measured by averaging intrinsic and identified responses.

3.3.5. Plan enactment

At T3, participants were asked “How frequently did you enact this plan [pipe in plan] when encountering obstacles in your goal pursuit?” for their two goals. This measurement was used to assess how often the if-then plans were enacted since they had been generated. A Likert scale measured participant responses ranged from 1 “Never” to 7 “Multiple times per day”.

3.3.6. Goal progress

Goal progress was measured with three items at T3 following Koestner et al. (2012). A sample item is “I have made a lot of progress toward my goal”. Items were measured on a 7-point Likert scale from 1 “strongly disagree” to 7 “strongly agree” and averaged across each personal goal.

3.3.7. Action crisis

At T3, action crisis severity was measured with 6 items for each goal using the English version of the Action Crisis Scale (Holding et al., 2017). A sample item is “Lately I feel torn between continuing to strive for this goal and abandoning it”. Ratings were made on a 7-point Likert scale from 1 “strongly disagree” to 7 “strongly agree.”

4. Results

4.1. Descriptive analyses

Descriptive statistics and correlations of the variables are described in Table 1. There was a moderate positive correlation between autonomous goal motivation at (T1) and (T3), suggesting that autonomous goal motivation tended to be relatively stable across the academic semester ($r = 0.49$). Consistent with our hypothesis, there was a positive association between T1 autonomous goal motivation and T3 autonomous if-then plan motivation ($r = 0.34$). There was a positive association

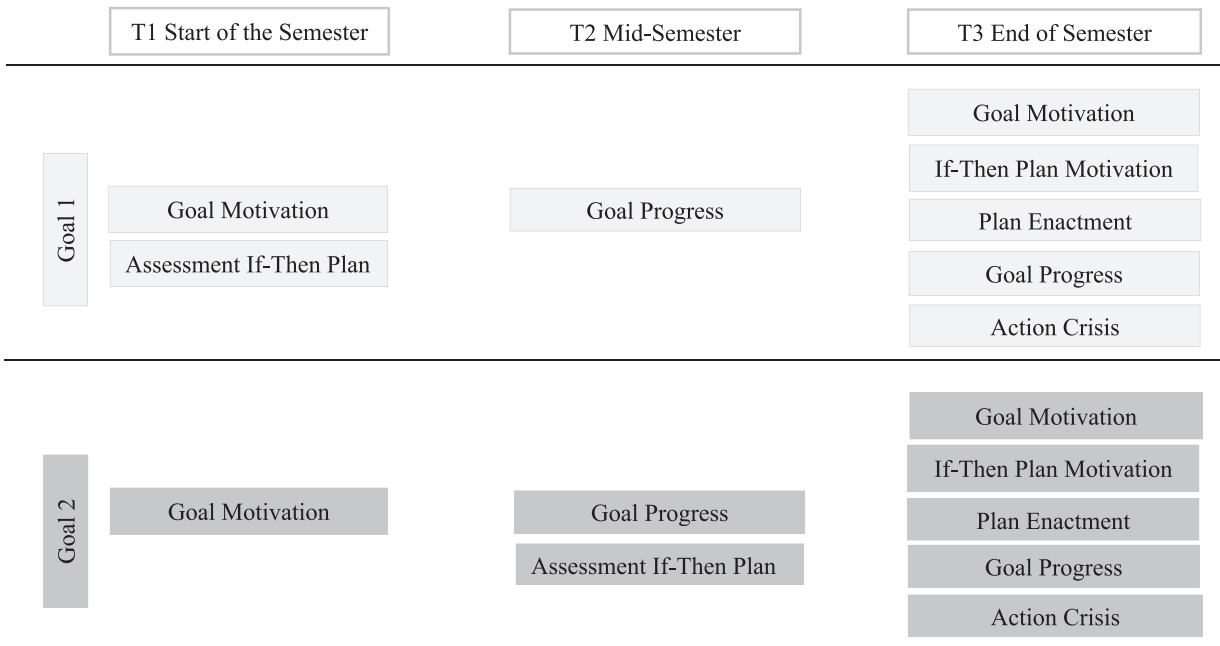


Fig. 1. Illustration of the study design.

Table 1
Descriptive analyses and correlations.

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. Autonomous Goal (T1)	5.22	0.97	–						
2. Autonomous Goal (T3)	5.20	0.91	0.49**	–					
3. Autonomous Plan (T3)	55.55	21.99	0.34**	0.38**	–				
4. Plan Enactment (T3)	3.65	1.30	0.08	0.15**	0.16**	–			
5. Goal Progress (T3)	4.13	1.35	0.10	0.26**	0.16**	0.46**	–		
6. Action Crisis (T3)	3.73	0.95	–0.15**	–0.32**	–0.17**	–0.20**	–0.54**	–	
7. Sex	1.87	0.37	0.03	–0.02	–0.06	0.00	0.03	0.01	–
8. Age	20.45	3.19	0.06	0.01	0.06	–0.00	0.00	–0.08	–0.14**

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

Sex was coded 1 = Men, 2 = Women, 3 = Self-Definition Preferred.

between frequency of plan enactment and goal progress ($r = 0.46$) and a negative association with action crisis severity ($r = -0.20$). Furthermore, there was a negative association between goal progress and action crisis ($r = -0.54$). As hypothesized, if-then plan motivation was positively associated with plan enactment ($r = 0.16$), and goal progress ($r = 0.16$), and negatively associated with action crisis severity ($r = -0.17$).

4.1.1. Goal progress

A hierarchical linear regression was used to test if autonomous goal motivation (T1), autonomous if-then plan motivation (T3), and frequency of plan enactment (T3) were significantly associated with goal progress at the end of the semester (T3) (see Table 2). First, autonomous goal motivation was entered and was not significantly associated with T3 goal progress. Next, autonomous if-then plan motivation was entered and positively associated with T3 goal progress. Frequency of plan enactment was also positively associated with goal progress. The three-way interaction of autonomous goal motivation, autonomous plan motivation and frequency of plan enactment on goal progress was non-significant. However, the two-way interaction effect of autonomous if-then plan motivation and frequency of plan enactment was significant, indicating that goal progress was greater when if-then plans were high in autonomous motivation and these plans were enacted frequently. The overall model predicted 24 % of the variance in T3 goal progress ($F(7, 319) = 14.41, p < .001$). A simple slope analysis revealed a significant

positive association between frequency of plan enactment and goal progress by levels of autonomous if-then plan motivation (see Fig. 2). There was a steeper increase of goal progress for frequency of high autonomous if-then plans than for frequency of low autonomous if-then plans.

4.2. Action crisis severity

A hierarchical regression was conducted to evaluate if autonomous goal motivation (T1), autonomous if-then plan motivation (T3), and frequency of plan enactment (T3) were associated with action crisis severity for personal goals at the end-of-semester (see Table 3). Autonomous goal motivation, autonomous if-then plan motivation, and frequency of plan enactment were all negatively associated with T3 action crisis severity. The three-way interaction of autonomous goal motivation, autonomous plan motivation and frequency of plan enactment on action crisis severity was non-significant. However, of the two-way interactions, the effect of autonomous if-then plan motivation and frequency of plan enactment was significant, ($\beta = -0.19, p = .001$), indicating that action crisis severity decreased at a higher rate when if-then plans were high in autonomous motivation and were enacted frequently. The overall model predicted 11 % of the variance in end of semester action crisis severity ($F(1, 319) = 5.56, p < .001$). A simple slope analysis revealed a significant negative association between frequency of plan enactment and action crisis with levels of autonomous if-then plan motivation (see Fig. 3), such that there was a steeper decline in action crisis severity for frequency of high autonomous if-then plans than for frequency of low autonomous if-then plans.

Table 2
Hierarchical regression predicting T3 goal progress.

Step	Variable	<i>B</i>	<i>t</i>	95 % <i>CI</i>	<i>F</i> ^a	<i>R</i> ^{2a}
1	Autonomous Goal Motivation (T1)	0.09	1.7	[–0.02, 0.28]	(1, 325) = 2.90	0.01
2	Autonomous Plan Motivation (T3)	0.15*	2.55	[0.002, 0.02]	(1, 324) = 6.51**	0.02
3	Plan Enactment (T3)	0.43***	8.61	[0.35, 0.56]	(1,323) = 74.18***	0.18
	Autonomous Plan X Plan Enactment	0.15**	2.86	[0.06, 0.32]	(3,320) = 3.25 *	0.02
4	Autonomous Goal X Autonomous Plan	–0.04	–0.84	[–0.17, 0.07]		
	Autonomous Goal X Plan Enactment	0.00	0.08	[–0.14, 0.15]		
5	Autonomous Plan X Plan Enactment	0.10	1.72	[–0.12, 0.23]	(1, 319) = 2.96	0.01

* $p < .05$.

** $p < .01$.

*** $p < .001$.

5. General discussion

The present study investigated the associations between goal motivation, if-then plan motivation, frequency of plan enactment, goal progress, and action crisis severity. Building on the literature of goal motivation and implementation intentions, we introduced if-then plan motivation as a novel variable associated with goal progress and action crisis severity. A secondary aim was to test the potential synergistic effects of autonomous if-then plan motivation and frequency of if-then plan enactment. We found that autonomous if-then plan motivation and frequency of plan enactment interacted to enhance goal progress and minimize action crisis severity in goal pursuit.

5.1. Goal progress

The results suggested that the level of autonomous motivation a person had for their if-then plan was positively associated with goal progress, even when accounting for their goal-level autonomous motivation. In other words, regardless of whether someone pursued their goal for highly autonomous reasons, they could still reap the benefits of autonomous motivation if they felt interested in or aligned with their if-then plan. We also observed that individuals who set autonomous goals were likely to also harbour autonomous motivation for their if-then

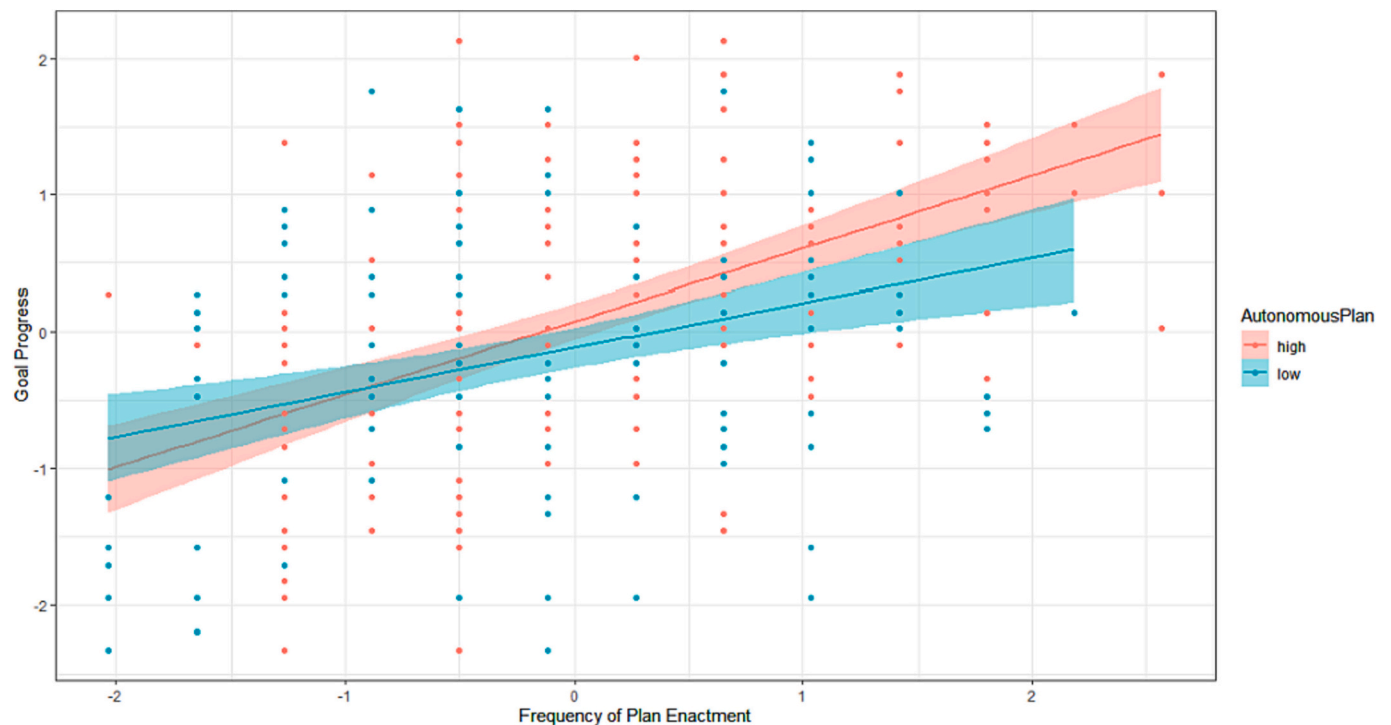


Fig. 2. Effects of autonomous if-then plan motivation and plan enactment on goal progress (T3).

Table 3
Hierarchical regression predicting T3 action crisis.

Step	Variable	B	t	95 % CI	P ^a	R ^{2a}
1	Autonomous Goal Motivation (T1)	−0.15**	−2.68	[−0.25, −0.04]	(1, 325) = 7.17**	0.02
2	Autonomous Plan Motivation (T3)	−0.13*	−2.28	[−0.01, −0.001]	(1, 324) = 5.21*	0.02
3	Plan Enactment (T3)	−0.16**	−3.01	[−0.20, −0.04]	(1, 323) = 9.06***	0.03
	Autonomous Plan X Plan Enactment	−0.19***	−3.27	[−0.26, −0.07]	(3, 320) = 5.37	0.05
4	Autonomous Goal X Autonomous Plan	−0.09	−1.67	[−0.17, 0.01]		
	Autonomous Goal X Plan Enactment	0.01	0.11	[−0.10, 0.12]		
5	Autonomous Goal X Autonomous Plan X Plan Enactment	−0.03	−0.43	[−0.11, 0.07]	(1, 319) = 0.182	0.001

* $p < .05$.
 ** $p < .01$.
 *** $p < .001$.

plans. These findings build on previous research positively linking autonomous goal motivation (Holding et al., 2017; Koestner et al., 2008) and autonomy supportive if-then plan instructions (Koestner et al., 2006) to enhanced goal progress. The degree of internalization of autonomous if-then plans may strengthen the link between the planned behaviour and environmental cues outlined in the if-then plan, aiding in strategic automaticity (Gollwitzer & Brandstatter, 1997). This is because the if-then plan is likely to be optimally suited to the goal pursuer's preferences, interests, and schedule.

Further we found that autonomous if-then plan motivation was positively associated with if-then plan enactment, such that individuals whose if-then plan reflected personal interests and values also reported following through on their plan more frequently. The combination of autonomous motivation for the if-then plan and frequent plan enactment was especially beneficial for individuals' goal progress, suggesting that repeatedly engaging with a plan that felt authentic and self-aligned was particularly fruitful for advancing one's goal. Interestingly the three-way interaction for goal motivation, plan motivation, and frequency of plan enactment did not reach significance, suggesting that the combination of a highly autonomous if-then plan with frequent plan enactment yields beneficial goal outcomes regardless of levels of autonomy for the goal.

Although previous research has demonstrated that crafting if-then plans leads to desired behaviour change in multiple domains (Gollwitzer & Sheeran, 2006), we find here that beyond "talking the talk" of creating an if-then plan, individuals benefit from "walking the walk" of enacting the plan consistently, especially when the plan is autonomous. An interpretation could be autonomous if-then plans may feel easier (Werner et al., 2016) and are more psychologically need satisfying (Hope et al., 2019), making it likelier the behaviour will become habitual and goal progress is accelerated. Ease of effort and psychological need satisfaction should be considered as mediators in future research.

5.2. Action crisis

Our results indicated that the level of autonomous if-then plan motivation was negatively associated with action crisis severity. The more autonomous participants felt about their if-then plan, the less they tended to report feelings of internal conflict about whether to persevere with or abandon their goal. These findings extend previous research that found autonomous goal motivation shields individuals from experiencing action crisis in goal pursuit (Holding et al., 2017).

Mirroring the goal progress findings, our results suggested that higher frequency of plan enactment was associated with lower levels of action crisis. Moreover, autonomous if-then plan motivation and plan

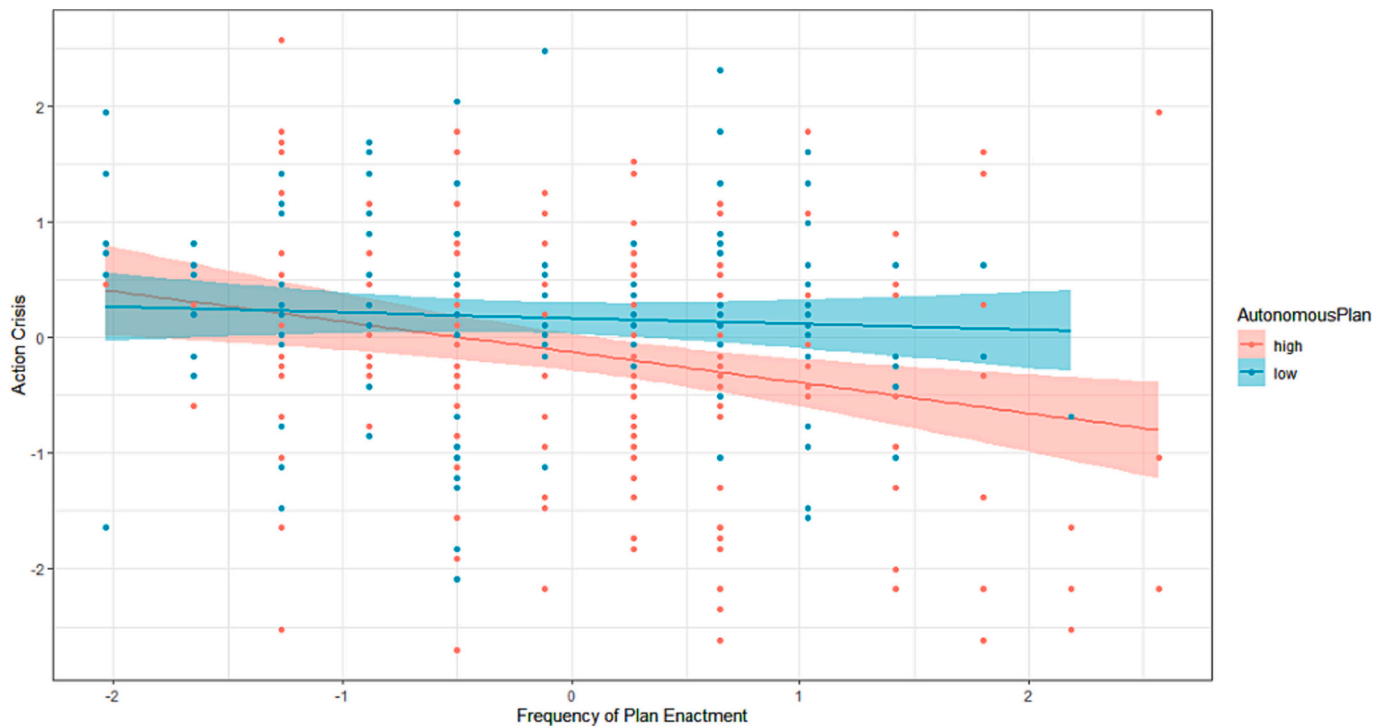


Fig. 3. Effects of autonomous if-then plan motivation and plan enactment on action crisis (T3).

enactment had a synergistic negative effect on action crisis severity. This highlights the importance of the if-then plan being aligned with personal values and interests –frequently enacting a plan that is ill-suited to the self does not promote “crisis-free” goal striving to the same extent as frequently enacting a highly autonomous plan. Again, we did not find evidence of a three-way interaction with goal motivation, suggesting that highly autonomous if-then plans that are enacted frequently shield the pursuer from action crises regardless of whether the goal itself is highly autonomous or not.

5.3. Implications

The findings of this study point to a hopeful implication for those pursuing goals that are not yet fully integrated into the self. Specifically, we found that regardless of how autonomous participants were motivated toward their goal, they could still benefit from having an autonomous if-then plan with regards to positive associations with goal progress and negative associations with action crises. Future research is needed to examine whether crafting an autonomous if-then plan may even be a pathway to enhance goal internalization. This would be an attractive autonomy-enhancing intervention, not only because if-then planning is a cost-effective self-regulation strategy (Prestwich & Kellar, 2014), but also because individuals may find it easier to identify how a plan may be adjusted to suit their interests and preferences compared to the larger goal. Moreover, by encouraging individuals to select plans that cohere with their values and interests, the efficacy of if-then plans may also be significantly enhanced. To give a practical suggestion on how this might be accomplished, we would recommend that individuals reflect on ways in which their plan can be tailored around their preferences and interests, rather than generating plans that sound good in theory but feel impersonal. For example, if someone is an evening person, their plan might feel less autonomous if it involves an early wake-time. Meanwhile, if someone values social interactions, maybe the plan can include meeting with a friend. Future research is needed to determine optimal instructions to facilitate the adoption of autonomous if-then plans. The materials used in Koestner et al. (2006) offer a promising start.

We note several limitations. Self-report measures cannot exclude the possibility of socially desirable responding. The use of a university student sample precludes generalizability of the findings, although previous research indicates that if-then plans promote behaviour change in multiple domains and populations (Gollwitzer & Sheeran, 2006). Our correlational study design and moderation analysis with cross-sectional data are further limitations that warrant longitudinal and experimental replication. Importantly, potential causal effects could not be determined with the current design. For example, we have theoretical reasons to assume that the motivation underlying if-then plans would inform how often the plan would be implemented (Ryan & Deci, 2017). However, by measuring if-then plan motivation, frequency of plan enactment, and goal progress concurrently, the direction of these associations could not be confirmed. Following the choice-induced preference literature (e.g., Lee & Daunizeau, 2020), it is also plausible that plan enactment enhances preferable feelings toward the plan, resulting in higher ratings of autonomous if-then plan motivation. A reciprocal and dynamic association between if-then plan motivation, enactment, and progress is also conceivable, whereby greater autonomous if-then plan autonomous motivation is associated with more frequent plan enactment, which, in turn, boost's goal progress and autonomous motivation. Further research is also needed to investigate potential contextual factors, including external support, that might explain why some people spontaneously set more autonomous if-then plans. Research by Levine et al. (2021) suggests that individuals' level of autonomous goal motivation may be importantly associated with their level of autonomy support. Extrapolating from this research, individuals who receive more autonomy support may not only set more autonomous goals but also craft more autonomous plans to realize their goals.

6. Conclusion

In conclusion, the present research showed a positive association of autonomous if-then plan motivation with goal progress and negative association with action crisis severity beyond goal motivation. This may have significant implications in various contexts where effective goal pursuit is essential. While research has already established that

autonomous goals and if-then plans bolster effective goal pursuit, this research highlights the potential additional benefits of having autonomous if-then plans. Our research suggests that when forming if-then plans, individuals can optimize goal outcomes by crafting plans that are interesting, meaningful, or in line with personal values.

CRedit authorship contribution statement

Anne Holding: Writing – review & editing, Writing – original draft, Project administration, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Christine Cunningham:** Writing – review & editing, Writing – original draft, Visualization, Formal analysis. **Richard Koestner:** Writing – review & editing, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Conceptualization. **Gabriele Oettingen:** Writing – review & editing, Supervision, Software, Resources, Formal analysis.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: Anne Holding reports financial support was provided by Government of Canada Social Sciences and Humanities Research Council. Richard Koestner reports financial support was provided by Government of Canada Social Sciences and Humanities Research Council. Richard Koestner reports financial support was provided by Quebec Research Fund Society and Culture. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.paid.2024.112617>.

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