

Motives and Mental Contrasting With Implementation Intentions Predict Progress and Management of Goals in Parents

Hugh Riddell¹, Constantine Sedikides², Daniel F. Gucciardi^{1, 3}, Ben Jackson^{4, 5}, Cecilie Thøgersen-Ntoumani^{6, 7}
and Nikos Ntoumanis^{6, 8}

¹ Curtin School of Allied Health, Curtin University

² Center for Research on Self and Identity, School of Psychology, University of Southampton

³ Curtin enAble Institute, Faculty of Health Sciences, Curtin University

⁴ School of Human Sciences (Exercise and Sport Science), University of Western Australia

⁵ Telethon Kids Institute

⁶ Danish Centre for Motivation and Behaviour Science, University of Southern Denmark

⁷ Curtin School of Population Health, Curtin University

⁸ School of Health and Welfare, Halmstad University

Parents must rapidly adapt goals from various aspects of their lives to accommodate the demands of the early stages of parenthood. According to the self-concordance model, having autonomous goal motives (based on enjoyment or personal goal value) should foster effective self-regulation (e.g., coping strategies), better goal management, and increase the likelihood of goal attainment, compared to controlled motives (goals driven by demands/pressures). Metacognitive techniques, such as mental contrasting with implementation intentions (MCII), can also facilitate goal regulation. We used experience sampling over 1 month to study goal striving in parents ($N = 103$). We investigated how motives and spontaneously occurring features of MCII (i.e., mental imagery, reflection on obstacles, implementation intention planning) predict three key self-regulatory coping strategies: exerting effort, disengaging, and modifying/adjusting goals to make them attainable. We examined whether these strategies influenced relations between motives and goal progress, intergoal facilitation, and interference between parenting/competing life goals. Autonomous motives and MCII-like features were positively associated with effort coping, which in turn was related to goal progress and facilitation. Additionally, in individuals with high controlled motives, MCII-like features positively predicted increased adjustment of competing life goals. Goal adjustment positively predicted differences in intergoal facilitation. Results indicate that exerting effort and adjusting goals are effective strategies for attaining and managing multiple goals. Both goal motives and MCII-like features are associated with the use of these strategies. The findings suggest that parents will benefit from selecting autonomously motivated goals and using MCII-like features to manage parenting and other competing life goals.

Keywords: goal management, goal motives, mental contrasting with implementation intentions, parenthood

Supplemental materials: <https://doi.org/10.1037/mot0000290.supp>

Parents must rapidly learn to adapt various aspects of their life to accommodate goals associated with parenting (Shockley et al., 2017). The inability to manage multiple goals appropriately can lead to intergoal interference, reduced goal progress, and decreased well-being (Gray et al., 2017). In contrast, if goals can be balanced harmoniously, goal progress and intergoal facilitation can occur,

leading to higher likelihoods of goal attainment and increased well-being (Riediger & Freund, 2004). Motivation plays a central role in a person's ability to regulate and benefit from goal striving (Ryan & Deci, 2017). Understanding how motivational factors predict the attainment and management of goals in parents, particularly during the early stages of parenthood, has ramifications for both parental psychological health and child development (Jungert et al., 2015), yet remains an overlooked topic.

In this article, we draw on and expand an established model of goal regulation, the self-concordance model (Sheldon & Elliot, 1999), as a framework to address outstanding questions related to the role of motives and key coping processes in parental goal striving. Furthermore, we investigate whether the spontaneous occurrence of cognitive features inherent in mental contrasting with implementation intentions (MCII; Oettingen & Gollwitzer, 2010) fosters effective regulation of multiple goals, thus establishing evidence for developing MCII interventions tailored for parents.

This article was published Online First March 2, 2023.

Hugh Riddell  <https://orcid.org/0000-0001-8218-7822>

All data for this project has been made publicly accessible via the Open Science Framework (https://osf.io/57dzk/?view_only=71c8142cb91e4eeb824e8d49190a8c5b).

This project was funded by an Australian Research Council grant (DP200101555) awarded to the authors (PI: Ntoumanis).

Correspondence concerning this article should be addressed to Hugh Riddell, Curtin School of Allied Health, Curtin University, GPO Box U1987, Perth, Australia, 6845. Email: hugh.riddell@curtin.edu.au

The Role of Motives in Self-Regulatory Coping

According to the self-concordance model (Sheldon & Elliot, 1999), which is grounded in self-determination theory (Ryan & Deci, 2017), motives contribute to the likelihood of experiencing goal progress and attainment. Goals that align with an individual's values, beliefs, and self-concepts are autonomously motivated (e.g., striving for a goal because it brings joy or satisfaction). Controlled motivation, on the other hand, denotes goal striving driven by internal (e.g., to avoid shame or guilt) or external (e.g., to attain money or tangible benefits) pressures or demands (Ryan & Deci, 2017). A meta-analysis of the separate contributions of autonomous and controlled motives to goal pursuit indicated that autonomous motivation predicts an improved likelihood of goal progress, whereas controlled motives are negatively related to goal progress (Gaudreau et al., 2012).

Differences in goal progress experienced under autonomous and controlled motives can be partially explained by the self-regulatory coping mechanisms that individuals use (Heckhausen et al., 2010; Ntoumanis et al., 2009). Broadly, self-regulatory coping mechanisms can be defined as cognitive and behavioral processes enacted in response to a stressor. Autonomous motives have been linked to task-based coping strategies intended to directly manage the stressor. The exertion of effort, in particular, is a coping mechanism that increases persistence in the face of adversity, typically conducting to goal progress (Riddell et al., 2022). Conversely, controlled motives are more likely to instigate coping strategies associated with behavioral or mental disengagement from the goal (Gaudreau et al., 2012; Ntoumanis, Healy, Sedikides, Duda, et al., 2014; Ntoumanis, Healy, Sedikides, Smith, & Duda, 2014; Smith et al., 2011).

Although coping by exerting effort is adaptive when goals are attainable, accommodative coping, in which an individual adjusts their approach to circumvent or adapt to obstacles, is necessary when goals become unattainable (Brandstätter & Bernecker, 2022; Brandstätter & Rothermund, 2002). Individuals faced with the decision of whether to continue pursuing a failing course of action are more likely to question the value of continued pursuit and downgrade goal-relevant resources (Herrmann et al., 2019). Accepting a goal's unattainability, unburdening resources, and ultimately disengaging from a failing goal enables goal adjustment (i.e., modifying a goal to make it achievable; Barlow et al., 2020; Brandstätter & Bernecker, 2022; Carver & Scheier, 2005; Scobbie et al., 2021; Wrosch & Scheier, 2020). Although controlled motivation is positively associated with disengagement, it is not predictive of adjustment (Ntoumanis, Healy, Sedikides, Duda, et al., 2014; Ntoumanis, Healy, Sedikides, Smith, & Duda, 2014). On the other hand, autonomously motivated individuals find it more difficult to disengage from goals but easier to adjust, particularly if the goal's unattainability is realized early in the striving process (Ntoumanis, Healy, Sedikides, Smith, & Duda, 2014).

The scope of evidence regarding how motives influence parental coping and in turn goal striving is limited. For parents with limited economic and societal opportunities, disengagement from unattainable work or family goals is linked to increased well-being, indicating that disengagement can act as a protective mechanism when goal-striving resources are limited (Heckhausen et al., 2019; Tomasik et al., 2010). Similarly, for parents of children diagnosed with cancer, the ability to disengage from unattainable goals and adopt viable alternatives has been related to decreased depressive symptomology (Wrosch et al., 2003). Here, we use the self-concordance model as a

framework for understanding how motives predict key self-regulatory coping strategies during goal striving (i.e., effort/disengagement/adjustment) and in turn goal progress in parents. We formulated two hypotheses, which apply to both parenting and broader life goals:

Hypothesis 1a: Autonomous goal motives will be positively related to goal adjustment and effort coping, which will in turn will be positively related to goal progress.

Hypothesis 1b: Controlled motives will be positively related to disengagement coping, which will be negatively related to goal progress.

The Role of Motives in Goal Management

Goal striving rarely occurs in a vacuum, and it is important to consider a person's goals in the context of their other pursuits (Kung & Scholer, 2020). Given the competing demands of early-stage parenthood, the capacity to balance various pursuits may have a substantial impact on goal-striving success. Motives can also affect the ability to manage multiple competing goals (Healy et al., 2016). In parents, controlled motivation for either work or family goals is associated with family alienation, which in turn contributes to work-family conflict and emotional exhaustion (Kuvaas et al., 2017; Sénécal et al., 2001). In contrast, individuals engaged in their work for autonomous reasons are more likely to experience enrichment between their work and family lives, as well as engagement with their goals (Ilies et al., 2017; Kuvaas et al., 2017). Research on how individuals manage parenting goals alongside goals outside of the career domain, however, is lacking. We address this gap by examining how motives and coping strategies predict facilitation and interference between multiple goals from a range of life domains in early-stage parents. Furthermore, we investigate how these intergoal dynamics relate to goal progress. For both parenting and life goals, we hypothesize that:

Hypothesis 2a: Autonomous goal motives, effort coping, and goal adjustment will be positively related to intergoal facilitation.

Hypothesis 2b: Controlled goal motives and disengagement coping will be positively related to intergoal interference.

Hypothesis 2c: Intergoal facilitation will be positively related, whereas intergoal interference will be negatively related, to goal progress.

Mental Contrasting With Implementation Intentions

Finally, although it is important to understand factors that contribute to effective goal striving, it is also crucial to determine how these factors can be strengthened. MCII (Oettingen & Gollwitzer, 2010) is a metacognitive strategy that has been used to promote goal progress for challenging goals in various contexts (Wang et al., 2021). In MCII, an individual first imagines the attainment of their goal and then contrasts this imagined state with reality to identify obstacles to the goal's attainment (mental contrasting; Oettingen, 2012). The individual subsequently forms simple "if-then" plans (implementation intentions; Gollwitzer & Schaal, 1998) to help them overcome these obstacles should they arise. Mental contrasting reinforces goal commitment when the expected likelihood of goal attainment is high, but reduces commitment when the likelihood of attainment is low (Kappes &

Oettingen, 2014). Similarly, MCII and implementation intentions can facilitate the reduction in commitment to excessively costly goals (Legrand et al., 2017; Riddell et al., 2022).

Research on the usefulness of MCII for parents is limited. However, there is some evidence that training parents to use implementation intentions can improve various health outcomes (e.g., oral health, sunscreen use) in their children, particularly if parents are motivated to attain these goals (Armitage et al., 2020; Van Osch et al., 2008). Furthermore, the benefits of the mental contrasting process can transfer from one task to another, which may be particularly advantageous for multiple goal pursuit (Sevincer et al., 2023). For example, mental contrasting can increase individuals' willingness to exert effort toward balancing work and family goals (Oettingen, 2000).

The capacity of MCII to modulate goal commitment based on a goal's attainability makes it an interesting candidate for promoting efficacious self-regulation. Ntoumanis and Sedikides (2018) proposed that interactions between MCII and goal motives could influence self-regulatory responses to goals. For individuals with controlled motivation, MCII should encourage effort toward attainable goals and accommodative coping in the face of adversity, both of which would otherwise be diminished under controlled motivation (Riddell et al., 2022). Given that autonomous motivation already encourages commitment and persistence, autonomously motivated goals that are attainable should benefit less from MCII (Ntoumanis, Healy, Sedikides, Duda, et al., 2014). If an autonomously motivated goal becomes unattainable, MCII should facilitate disengagement, which is more difficult for autonomously motivated individuals due to their personal investment in the pursued goal (Ntoumanis, Healy, Sedikides, Smith, & Duda, 2014). This has implications for the applied utility of MCII for parents, who often have to accommodate multiple goals underpinned by differing motives (Kuvaas et al., 2017).

Both mental contrasting (Sevincer & Oettingen, 2013) and implementation intentions (Bieleke & Keller, 2021; Brickell et al., 2006) can arise spontaneously in the absence of prompts or training, conferring similar benefits to goal striving as trained interventions. More broadly, habitually engaging in thoughts about situational cues and intended future actions relevant to goal pursuit can also promote goal striving (Martiny-Huenger et al., 2022). Here, we seek to provide evidence that spontaneously arising cognitive features of MCII (e.g., fantasizing, identifying obstacles, forming specific plans) help parents to co-manage parenting and life goals. This is an important step for establishing the potential usefulness of MCII-based interventions for parents, as self-regulation interventions are most effective when they align with techniques that individuals use naturally (Peetz & Davydenko, 2021). In this article, we test whether MCII-like cognitive features arise spontaneously and can support goal striving in parents. For both parenting and life goals, we hypothesize:

Hypothesis 3a: MCII-like cognitive features will be positively related to goal adjustment and effort coping.

Hypothesis 3b: MCII-like features will predict greater effort coping and goal adjustment in individuals with strong controlled motives.

Hypothesis 3c: MCII-like features will predict greater disengagement coping in individuals with strong autonomous motives.

Overview

We address the question of how goal motives and spontaneously occurring MCII-like cognitive features relate to self-regulatory coping in early-stage parents, and how these in turn relate to multiple goal management and progress. The self-concordance model details how a person's motives influence their thoughts and behaviors during goal striving and is thus inherently specified at an intra-individual level. Nonetheless, the self-concordance model is frequently evaluated by looking at differences between people (e.g., cross-sectional surveys). In such cases, the failure to examine within-person effects can result in research that is misaligned with the tested theory (Gabriel et al., 2019). The dynamic nature of goal striving is frequently overlooked (Neal et al., 2017), we use experience sampling (i.e., diary study) to probe how motives and self-regulatory coping predict goal outcomes both between-persons (i.e., what differentiates one individual from another) and within-persons (i.e., what differentiates one instance of goal striving from another). We asked early-stage parents to identify one parenting goal (e.g., spend more time playing with my child) and one goal from another aspect of their life that would compete with their parenting goal (e.g., start running again), which they planned to pursue for at least the next 6 months.¹ Over the following month, we measured goal progress, intergoal facilitation/interference, disengagement coping, effort coping, goal adjustment, and spontaneous use of MCII-like cognitive features every 3 days.

Method

Transparency and Openness

We preregistered the hypotheses, method, and analyses on Open Science Framework (OSF). All data and analysis scripts are available on the project's OSF page (<https://osf.io/57dzk>). We initially registered the study as a measurement burst design that involved assessing participants every 3 days in two separate and identical month-long bursts over a 6-month period. Due to an unexpected number of participants dropping out of the second measurement burst, we departed from the preregistered design by reporting results for the first measurement period only.² Importantly, the hypotheses and variables that we measured are the ones named in the preregistration. We provide on the project's OSF page data collected in both bursts, as well as measures (overall goal progress/ease of disengagement/goal adjustment, parental efficacy, striving tenacity/flexibility, goal importance/

¹ We were interested in long-term goals that were likely to cover the duration of the preregistered study; however, due to factors that limited the longitudinal data analysis, we present results from the first measurement month only (see *Method* for detail).

² We recruited $N = 107$ for the first measurement burst, but $N = 42$ did not complete the second burst three months later. The remaining sample ($n = 61$) would entail inadequate statistical power for the analysis of the burst design (a priori power simulations determined that $N = 80$ would have provided 80% statistical power for the planned burst analysis). Additionally, in the preregistration we stated that we would conduct exploratory multilevel structural equation modelling (MLSEM; Preacher et al., 2010). We adopted the MLSEM approach as the main analysis in the current article to maximize the utility of the relatively large sample gathered in the first burst. This analysis mirrors the one planned in the preregistration (i.e., the same variables are regressed on one another), but precludes the need to execute multiple analyses, thus reducing a potential source of error.

attainability/difficulty) taken either before or following each burst but not analyzed.

Sample Size

Due to the departure from the preregistered design, we used Monte Carlo simulations ($N = 1,000$) to estimate the size of model coefficients that could be reliably detected with at least 80% power given the sample of 103 participants collected in the first burst to provide a boundary of confidence for interpretation of the observed effects (Arend & Schäfer, 2019). We determined that the smallest reliably detectable path coefficient, given our sample, is $\beta = 0.10$ for all paths at the within-person level. At the between-person level, the smallest reliably detectable coefficients are: $\beta = 0.10$ for paths between motives/MCII-like features and self-regulation variables, $\beta = 0.27$ for paths between self-regulation variables and goal progress/facilitation/interference, and $\beta = 0.30$ for paths between facilitation/interference and goal progress. Significant path coefficients smaller than these values may be underpowered and should be interpreted with caution.

Participants

The study was approved by the Curtin University Human Research Ethics Committee. We recruited 107 early-stage parents,³ that is, individuals living with at least one child aged between 6 and 36 months. This range covers the period of rapid adjustment associated with early parenthood, while precluding the intense care period following childbirth and the alleviated care requirements associated with the onset of kindergarten care. Both mothers and fathers were eligible for participation. We excluded four participants who completed only one diary survey during the month, as we were interested in assessing effects at both within-person and between-person levels. The final sample was 103. We recruited some (14) participants through word of mouth at Australian organizations that cater to early parents (e.g., child-parent centers, daycare centers). We recruited the remaining participants (89) via Prolific Academic; they were from the United Kingdom, which has a similar cultural and demographic profile to Australia (Lansford, 2022). Most participants (85%) were female with a mean age of 33.40 years ($SD = 5.13$); 95% of them were in a relationship; 77% were employed at least part time and spent an average of 21.07 hr per week working ($SD = 15.50$). Participants had 1.75 children on average ($SD = 0.79$). We compensated them up to \$38 USD for the percentage of the study they completed.

Baseline Measures

Goal Motives

We measured autonomous and controlled goal motives at baseline for both the parenting and competing life goal using an 8-item goal motives scale (Ntoumanis, Healy, Sedikides, Duda, et al., 2014; Ntoumanis, Healy, Sedikides, Smith, & Duda, 2014). It consisted of four items relating to autonomous goal motives (e.g., “Because of the enjoyment or challenge the pursuit of the goal provides me”) and four items relating to controlled motives for goal pursuit (e.g., “I will receive praise or other rewards for doing it”; $1 = \text{not at all}$, $7 = \text{very much so}$). Participants first rated motives for their parenting goal and then rated motives for their competing life

goal. We calculated separate autonomous and controlled motives scores for each goal by averaging the items relevant to each construct.

Participants re-rated goal motives whenever they changed their goal. During the study, 21 participants reported changing their competing life goals and 10 reported changing their parenting goals. Most maintained their original goals or changed goals only once. Over the whole sample, the parenting goal was changed on 2%, whereas the competing life goal was changed on 4%, of measurements. Given the relative infrequency of goal changes, there was correspondingly low within-person variability in goal motives. We created weighted motives scores at the between-person level only by averaging motives scores for the previous and new goal, and weighting averages by the number of days they spent striving for each goal. For example, for a participant who completed all measurements but reported changing their goal once on the third measurement, we would assign the original motives scores a weight of 3 and the new motives scores a weight of 7.

Diary Measures

Goal Progress

We measured progress for each goal with three items adapted from Louro et al. (2007). A sample item is: “How much progress have you made towards your PARENTING goal?” ($1 = \text{none/not at all}$, $7 = \text{a lot/very}$).

Coping Strategies

We measured two coping strategies with three items each: effort coping (e.g., “I concentrated my efforts on the goal”) and disengagement coping (e.g., “I stopped believing in my ability to reach my goal”; $1 = \text{not at all}$, $7 = \text{very much so}$). We derived the items from the effort and disengagement coping subscales of the English version of the l’Inventaire des Stratégies de Coping en Compétition Sportive (Gaudreau & Blondin, 2002)

Goal Adjustment

We measured the ease with which participants were able to adjust their goal striving by looking for new ways to pursue their goal. Participants rated the extent to which they agreed ($1 = \text{strongly disagree}$, $5 = \text{strongly agree}$) with three statements (e.g., “I tried pursuing my goal in different ways”) adapted from Wrosch et al. (2003).

MCII-Like Cognitive Features

We measured the spontaneous occurrence of three cognitive features inherent to the MCII process, namely, use of mental imagery, reflection on obstacles, and use of implementation intention planning, with three items each ($1 = \text{not at all}$, $7 = \text{very much so}$). We adapted the mental imagery items (e.g., “I imagined that I was doing well at attaining my goal”) from the imagery scale of the

³Based on IP addresses and home addresses we are confident that parents were from separate households, but cannot unambiguously exclude the possibility that some participants were co-parents of a child. Co-parents would still have different goals, with day-to-day factors influencing their striving. Thus, any dependency in responses resulting from parents sharing a child is likely to be minimal.

English version of the l'Inventaire des Stratégies de Coping en Compétition Sportive (Gaudreau & Blondin, 2002). We adapted two of the reflection on obstacles items (e.g., "I thought about what setbacks to expect") from the Overcoming Obstacles subscale of the If-Then Planning Scale (Bieleke & Keller, 2021) and created the third item ("I considered what barriers might hinder the attainment of my goal"). We adapted the planning items (e.g., "I planned where and how I was going to engage in my goal") from Brickell et al. (2006). We present reliabilities for the three subscales for the parenting goal at the within- and between-person levels (Geldhof et al., 2014) in the online [supplemental materials](#). We calculated an overall MCII-like cognitive features score for each goal by averaging scores for all three subscales. This approach is similar to the one adopted for the study of spontaneous implementation intentions (Bieleke & Keller, 2021).

Our overall MCII-like cognitive features score does not disentangle the order in which individuals engage in cognition. Our use of the term "MCII-like features" denotes the tendency to engage spontaneously in the cognitive processes that are an inherent part of MCII but should not be confounded with the use of MCII itself. Without future validation, we cannot assume that the term directly reflects MCII.

Intergoal Interference/Facilitation

We measured three items relating to intergoal interference (e.g., "Pursuing one goal limited my ability to pursue the other goal") and three items relating to intergoal facilitation (e.g., "I did something in the pursuit of one goal that was simultaneously beneficial for the other goal"; 1 = *not at all*, 7 = *very much so*; Riediger & Freund, 2004). We asked participants to reflect specifically on interference and facilitation between their parenting goal and competing life goal. Given the interrelation of goals and as per prior research, we did not have separate facilitation and interference scores for each goal, but rather one score that reflected facilitation between the parenting and competing life goal, and one score that reflected interference between the parenting and competing life goal.

Procedure

Participants filled out all measures online. First, they provided demographic information. Then, they were instructed to list a high-level parenting goal and a nonparenting goal that was likely to compete with their parenting goal for resources, at least some of the time. Given that we were interested in generalizable factors that influence how parents adapt other personally or functionally important goals in their lives, we did not restrict participants to selecting competing life goals from a particular domain. High-level goals were described as: "[goals that are] abstract enough that you can think of multiple ways of achieving them but defined enough that you should also be able to come up with clear signs of progress." The most frequently reported parenting goals were those associated with spending more quality time with their child (e.g., "Providing focused attention daily for activities such as reading and outdoor play"; 40% of parenting goals). The most frequently reported competing life goals were health/fitness/wellness goals (e.g., "I want to maintain good fitness levels and exercise in some form every day"; 30% of competing life goals). We provide a summary of the listed parenting and competing life goals in the online [supplemental materials](#).

After 1 week, participants began the experience sampling portion of the study in which they completed short surveys (diaries) every 3 days. Piloting established that this sampling frequency provided parents with enough opportunity to engage with their goals and minimized participant burden. We administered diaries for Australian participants using the SEMA3 app (Koval et al., 2019) and for the remaining participants through Prolific Academic and the Qualtrics survey platform. Diaries were sent out every 3 days for the following 30 days, with 10 diaries sent out in total. Participants received a notification via the SEMA3 app or Prolific Academic at 16:00 (local time) whenever a diary became available. Diaries remained available until 23:59 (local time). At the beginning of each diary, participants were asked whether they were still pursuing their nominated parenting and competing life goal goals; if they responded negatively for either goal, they were instructed to set a new goal and re-rate their goal motives. Goals were automatically piped into the relevant sections of the diary to remind participants of their goal. Participants were then asked to reflect on their goal striving over the last 3 days. In the diaries, participants reported their goal progress, use of effort and disengagement coping strategies, goal adjustment, and MCII-like cognitive features for the parenting goal and then for the competing life goal. Diaries also assessed the extent to which intergoal facilitation and interference occurred between the two goals. When responding to the questions, participants were instructed to reflect on their experiences over the last 3 days. Diaries took approximately 5 min to complete. On average, participants completed 7.13 out of 10 diaries ($SD = 2.38$, range = 2–10).

Analysis Overview

We conducted all analyses in Mplus (version 8.4; Muthén & Muthén, 2019). Before our main analysis, we carried out a multilevel confirmatory factor analysis with restricted maximum likelihood estimation (MLCFA) to test the viability of combining MCII-like cognitive features into a single score (see *MCII-Like Cognitive Features*). Given that these results are tangential to the main hypothesis, we present them in the online [supplemental materials](#).

To test our hypotheses, we constructed separate but identical models for each goal using two-level multilevel structural equation modeling (MLSEM; Preacher et al., 2010) with Bayesian estimation, which offers more flexibility and accuracy in terms of modeling interactions (Asparouhov & Muthén, 2021). Between-person portions of the model indicate how variables predicted goal striving from one individual to another (e.g., how do motives and coping differentiate a successful individual from an unsuccessful individual). Within-person portions of the model indicate how variables predicted the measurement-to-measurement fluctuations experienced by an individual (e.g., how does self-regulatory coping differentiate an individual's successful instances of goal striving from their unsuccessful instances).

We modeled hypothesized cross-level interactions (i.e., autonomous motives \times MCII predicting disengagement coping; controlled motives \times MCII predicting goal adjustment and effort coping) by having goal motives predict the random slopes that resulted from regressing MCII-like cognitive features on self-regulation variables at the within-person level (Zyphur et al., 2009). These interactions examine how goal motives (which are typically stable across long time periods; Healy et al., 2014) interact with MCII-like features

to predict fluctuations within a person's day-to-day goal striving. We controlled for the potential influence of number of children in a participant's family, hours of work, relationship status, and gender on goal outcomes (i.e., goal progress/facilitation/interference).

It is theoretically possible for goal motives to predict goal progress, facilitation, and interference both directly and indirectly via their effects on coping (Gaudreau et al., 2012). To ascertain the most parsimonious model for the current data, we tested variations of the model that differed in the way motives and MCII directly predicted the outcome variables at the between- and within-person levels. We present details and results of this analysis in the online [supplemental materials](#). We used the best fitting model to evaluate our hypotheses.

Results

We present in [Table 1](#) between-person level descriptive statistics for variables measured for each goal. Omega coefficients provide separate internal reliability estimates at the within- and between-person levels (Geldhof et al., 2014). Model results pertaining to control variables are tangential to our hypotheses, and we provide them in [supplemental materials](#). We depict structural equation models and path coefficients for the parenting goal and competing life goal in [Figures 1](#) and [2](#), respectively. We report indirect effects in the text. Full results, which include 95% credibility intervals for all path coefficients as well as control variables for both models, are available in the online [supplemental materials](#).

Hypothesis Series 1—Motives and Coping

Hypothesis series 1 predicted that autonomous motives would be associated with effort coping and goal adjustment, which in turn would be positively associated with progress (H1a), while controlled motives would be associated with disengagement coping, which would have negative associations with progress (H1b).

The results for both goals partially support Hypothesis 1a. Although autonomous motives were not related to goal adjustment for either goal, effort coping mediated the relation between autonomous motives and goal progress at the between-person level (indirect effect for the parenting goal: $\beta = 0.211$, 95% CI [0.059, 0.378]; indirect effect for the competing life goal: $\beta = 0.114$,

[0.008, 0.249]). Controlled motives were related to disengagement coping, which was unrelated to goal progress at the between-person level and negatively related to goal progress at the within-person level, partially supporting Hypothesis 1b for both goals.

Hypothesis Series 2—Multiple Goal Management

Hypothesis series 2 predicted that autonomous motives, effort coping, and goal adjustment would be associated with intergoal facilitation (H2a), while controlled motives and disengagement coping would be associated with intergoal interference (H2b). Additionally, we predicted facilitation would be positively associated with progress and interference would be negatively associated with progress (H2c).

Hypothesis 2a was partially supported for the parenting goal at the between-person level. Autonomous motives had indirect effects on intergoal facilitation via effort coping ($\beta = 0.067$, 95% CI [0.007, 0.148]) and disengagement coping ($\beta = -0.105$, [-0.194, -0.010]), but not goal adjustment. Turning to the competing life goal, autonomous motives had an indirect effect on intergoal facilitation via effort coping at the between-person level ($\beta = 0.179$, [0.049, 0.308]); however, there was a lack of association between autonomous motives and goal adjustment. Thus, there was also only partial support for Hypothesis 2a for the competing life goal.

Regarding Hypothesis 2b in the parenting goal model, controlled motives were associated with disengagement coping at the between-person level; however, there was no relation between disengagement coping and intergoal interference at this level. In contrast, we observed a positive association at the within-person level between goal disengagement and intergoal interference. Thus, we conclude that Hypothesis 2b is supported at the within-person level only for the parenting goal. For the competing life goal, disengagement coping was unassociated with intergoal interference at any level. Consequently, Hypothesis 2b was not supported at any level for the competing life goal.

Intergoal interference was related to goal progress at the between-person level for the parenting goal; however, the effect size of the path coefficient is smaller than that determined to be reliably detectable. Taking a conservative approach, we do not consider this effect further. There were no other associations between intergoal interference or intergoal facilitation and goal progress at any level for either goal. Therefore, we conclude that Hypothesis 2c was unsupported.

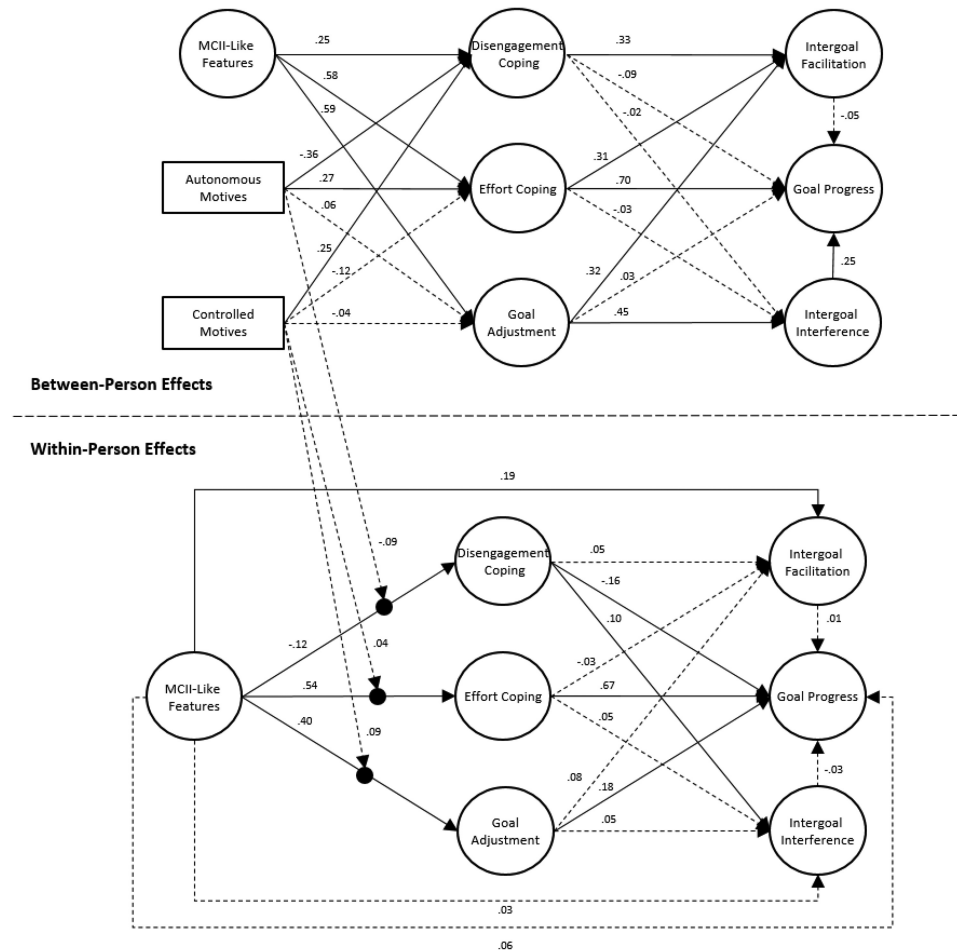
Table 1

Group Level Descriptive Statistics and Within/Between-Person Internal Reliability Estimates (ω) for Measures Relating to the Parenting and Competing Life Goal

	Parenting goal				Competing life goal			
	<i>M</i>	<i>SD</i>	ω_{within}	ω_{between}	<i>M</i>	<i>SD</i>	ω_{within}	ω_{between}
Goal progress	4.125	1.649	0.926	0.986	3.390	1.829	0.926	0.986
Intergoal facilitation*	1.862	1.020	0.762	0.937	1.862	1.020	0.762	0.937
Intergoal interference*	2.263	1.326	0.836	0.971	2.263	1.326	0.836	0.971
Effort coping	4.300	1.776	0.942	0.989	3.409	1.935	0.942	0.989
Disengagement coping	2.010	1.289	0.851	0.976	2.539	1.665	0.908	0.988
Goal adjustment	2.612	1.152	0.879	0.986	2.352	1.139	0.891	0.980
MCII-like cognitive features	3.212	1.413	0.892	0.928	3.327	1.457	0.904	0.955
Autonomous motives	5.760	0.873		0.773	5.572	1.125		0.796
Controlled motives	4.215	1.084		0.725	4.174	1.440		0.760

Note. *Single measure for both goals.

Figure 1
Multilevel Structural Equation Model for the Parenting Goal



Note. Rectangles represent measured variables, and labeled circles represent latent variables. Filled circles on lines represent the presence of cross-level interactions between goal motives and MCII-like features. Solid lines represent significant paths (95% credibility intervals do not include zero); broken lines represent nonsignificant paths. Control variables have been omitted for clarity.

Hypothesis Series 3—Effects of MCII-Like Cognition

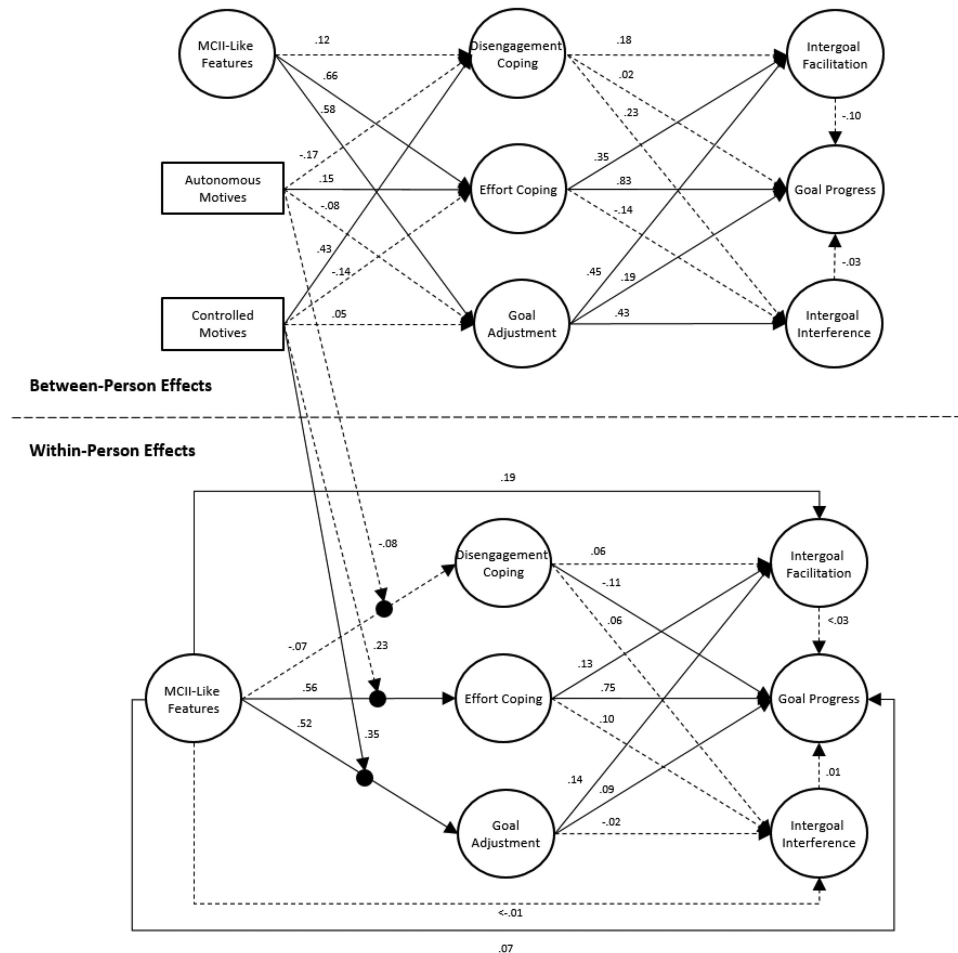
Hypothesis series 3 predicted that MCII-like cognitive features would be associated with effort coping and goal adjustment (H3a). We also predicted that interactions between MCII and goal motives would be related to self-regulatory coping strategies (H3b–c).

At the between-person level of the parenting goal model (top half of Figure 1), MCII-like cognitive features had a positive indirect effect on goal progress ($\beta = 0.395$, 95% CI [0.226, 0.545]) and intergoal facilitation ($\beta = 0.134$, [0.026, 0.246]) via effort coping. We observed additional positive indirect effects of MCII-like cognitive features on intergoal facilitation via disengagement coping ($\beta = 0.057$, [<0.001 , 0.131]) and goal adjustment ($\beta = 0.146$, [0.039, 0.268]). We also obtained a nonhypothesized positive indirect effect of MCII-like cognitive features on intergoal interference via goal adjustment ($\beta = 0.278$, [0.103, 0.443]). At the within-person portion of this model (bottom half of Figure 1), there were positive indirect

effects of MCII-like cognitive features on goal progress via effort coping ($\beta = 0.473$, [0.398, 0.549]), disengagement coping ($\beta = 0.025$, [0.002, 0.046]), and goal adjustment ($\beta = 0.088$, [0.055, 0.127]). Together, these results support Hypothesis 3a for the parenting goal.

Turning to the between-person component of the model for the competing life goal (top half of Figure 2), MCII-like cognitive features had a positive indirect effect on goal progress via effort coping ($\beta = 0.539$, 95% CI [0.343, 0.714]). MCII-like cognitive features also had positive indirect effects on intergoal facilitation via effort coping ($\beta = 0.199$, [0.071, 0.320]) and via goal adjustment ($\beta = 0.202$, [0.082, 0.309]). Again, MCII-like cognitive features had a nonhypothesized positive indirect effect on intergoal interference via goal adjustment ($\beta = 0.204$, [0.099, 0.353]). For the within-person portion of the model (bottom half of Figure 2), MCII-like cognitive features had positive indirect effects on goal progress via both effort coping ($\beta = 0.631$, [0.528, 0.717]) and goal adjustment ($\beta = 0.067$, [0.026, 0.113]) and on intergoal facilitation via effort

Figure 2
Multilevel Structural Equation Model for the Competing Life Goal



Note. Rectangles represent measured variables, and labeled circles represent latent variables. Filled circles on lines represent the presence of cross-level interactions between goal motives and MCII-like features. Solid lines represent significant paths (95% credibility intervals do not include zero); broken lines represent nonsignificant paths. Control variables have been omitted for clarity.

coping ($\beta = 0.046$, [0.008, 0.085]) and goal adjustment ($\beta = 0.047$, [0.006, 0.083]). These results support Hypothesis 3a for the competing life goal.

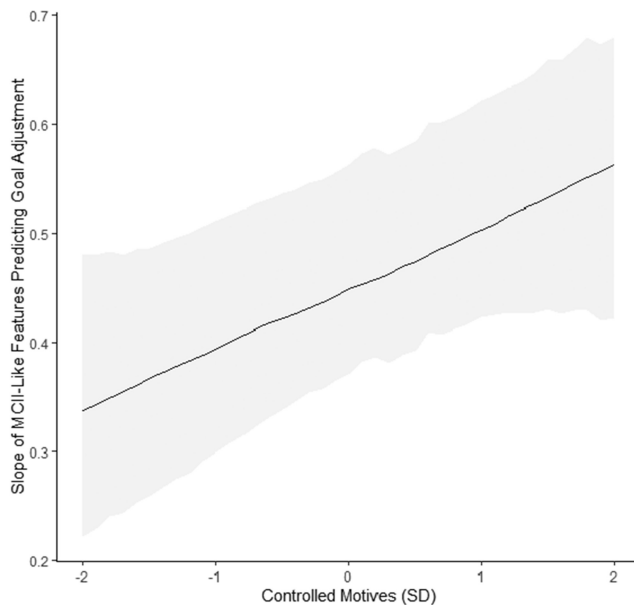
Cross-level interactions between MCII-like cognitive features and goal motives were not associated with any of the self-regulatory variables for the parenting goal. However, for the competing life goal, controlled motives at the between-person level were positively related to the within-person slope for the relation between MCII-like features and goal adjustment. Figure 3 depicts this interaction. Put another way, on occasions that people with strong controlled motives for their competing life goal reported using MCII-like features, they also reported making more adjustments to their goal. This interaction indirectly predicted goal progress within-persons ($\beta = 0.008$, 95% CI = [0.001, 0.018]) but not intergoal facilitation ($\beta = 0.006$, [-0.001, 0.013]), partially supporting Hypothesis 3b for the competing life goal. Hypothesis 3c was not supported for either goal.

Discussion

In the present study, we use the framework of the self-concordance model to draw a more holistic picture of parental goal striving. Our results provide an account of how MCII-like cognitive features and autonomous motivation predict effort-based coping strategies and adjustment, which in turn predict goal progress and intergoal facilitation.

At the between-person level, parents who strove for either parenting or competing life goals for autonomous reasons were overall more likely to use effective coping mechanisms, like exerting effort, which in turn helped them to experience greater overall goal progress. In contrast, controlled motivation predicted disengagement from the competing life goal and was unrelated to progress for either goal. These results extend key tenets of the self-concordance model, which has previously been applied to a range of other life domains (Milyavskaya & Koestner, 2011), to parental goal striving.

Figure 3
Cross-Level Interaction Between MCII-Like Features and Controlled Motives Predicting Ease of Goal Adjustment for the Competing Life Goal



Note. Shaded area represents 95% credibility interval.

According to the self-concordance model, success with autonomously motivated goals should support basic psychological needs and contribute to well-being (Klug & Maier, 2015; Sheldon & Elliot, 1999). By detailing how autonomous motivation conduces to successful goal striving, current results may also help to explain associations between autonomous parenting motivation and outcomes such as parental satisfaction, competence, and autonomy-supportive parenting (Dieleman et al., 2021; Jungert et al., 2015), as well as why children of autonomously motivated parents report greater well-being and fewer behavioral problems (Jungert et al., 2015).

A key contribution of this work lies in demonstrating how self-regulatory coping relates to goal striving at the level of the individual. On occasions when a parent engaged in effort coping and goal adjustment, they reported more goal progress, whereas disengagement-based coping strategies were negatively associated with progress. These results extend prior work emphasizing the importance of exerting effort (Ntoumanis, Healy, Sedikides, Duda, et al., 2014; Smith et al., 2011) and adjusting goal striving (Brandstädter & Rothermund, 2002) by demonstrating that these coping strategies differentiate more successful episodes of goal striving from less successful episodes. Most variation in goal progress across both parenting and competing life goals was attributable to within-person fluctuations, highlighting the often overlooked importance of investigating goal striving at the within-person level (Neal et al., 2017).

This study also produced novel insights into how motives and coping influence the management of competing goals. Goal adjustment combined with effort coping was related to greater overall intergoal facilitation for both goals; however, adjustment in the absence of contributions from other coping strategies was

associated with intergoal interference. Although these results provide mixed support for our hypotheses, they are consistent with the wider literature. According to Brandstädter and Rothermund's (2002) dual process model, the degree to which assimilative (e.g., effortful persistence) and accommodative (e.g., disengagement and adjustment) modes of coping are adaptive depends on the goal and available resources. Our results suggest that adjusting striving is beneficial only when individuals have the capacity to disengage from ineffective striving and dedicate effort to the adjusted goal (Haase et al., 2021; Herrmann et al., 2019).

We did not obtain compelling evidence that intergoal facilitation is associated with goal progress, nor that intergoal interference is negatively linked to progress at any level. Although successfully balancing goals through intergoal facilitation contributes to a more harmonious goal-striving experience, the distribution of resources across goals may mean that facilitation is not always beneficial to progress (Kung & Scholer, 2021). Conversely, intergoal interference may not necessarily undermine the ability to make progress on competing goals (Kung & Scholer, 2021; Segerstrom & Solberg Nes, 2006). For example, inadequate resources can be compensated for by engaging in sequential striving in which competing goals are momentarily paused in favor of the more demanding goal and resumed at a more convenient time point (Moshontz et al., 2021). Even when unrelated to goal progress, the importance of achieving intergoal facilitation should not be understated, as the ability for intergoal facilitation to promote well-being outcomes is relevant to the psychological health of parents and their dependent children (Gray et al., 2017; Jungert et al., 2015).

Effects of Spontaneously Emerging MCII-Like Cognition

Consistent with our third set of hypotheses, engaging in processes fundamental to MCII during goal striving was associated with greater goal progress and intergoal facilitation via effortful coping and goal adjustment. This builds on previous work indicating that spontaneously arising implementation intentions (Bieleke & Keller, 2021; Brickell et al., 2006) and mental contrasting (Sevincer & Oettingen, 2013) can independently promote goal progress. Few studies have considered MCII in the context of multiple goals, and those that did emphasize complementary rather than competing goals (Marquardt et al., 2017). The novel finding that spontaneously arising MCII-like features encourage intergoal facilitation for competing goals highlights the need for further research on the effectiveness of MCII for promoting multiple goal pursuit.

Research into whether MCII encourages accommodative goal striving through goal adjustment has been scarce. As an independent intervention, the mental contrasting component of MCII has an intuitive appeal for promoting accommodative goal striving (Oettingen & Gollwitzer, 2022), due to the purported abilities of mental contrasting to modulate goal commitment based on attainability (Kappes et al., 2013). Implementation intentions can also reduce goal commitment when the costs of goal striving are excessive (Legrand et al., 2017; Riddell et al., 2022). Regardless, previous research on the usefulness of combining mental contrasting and implementation intentions (i.e., MCII) has predominantly focused on advancing goal progress (Oettingen & Gollwitzer, 2010; Oettingen & Reininger, 2016). The present study suggests that

MCII may also be effective for encouraging flexible goal striving. Usage of cognitive components inherent in MCII had a stronger relation to goal adjustment in participants who reported high controlled motivation for their competing life goal. This is consistent with Ntoumanis and Sedikides's (2018) proposal that MCII may be most beneficial for the regulation of goals with controlled motives. Although we did not observe this interaction for the parenting goal, it is common for the pursuit of different goals to entail differing forms of self-regulation (Mann et al., 2013; Neal et al., 2017; Sansone & Thoman, 2006). Because parenting goals are inherently related to the care of a child, they may be seen as less adjustable than goals in other life domains, even when they are not self-concordant.

We emphasize that the composite MCII-like features measure in the present study should not be equated to the usage of MCII. We cannot unambiguously rule out the possibility that participants engaged in components in a different order (e.g., reverse contrasting by reflecting on obstacles before fantasizing; Oettingen, 2012) or only engaged in some components of MCII (e.g., fantasizing or dwelling). Nonetheless, the current study provides evidence that spontaneously arising components of MCII are linked to both effortful coping and goal adjustment. Despite disparities between the present methodology and true MCII, these results are a positive indicator that MCII interventions could be effective for helping parents to manage competing goals. Importantly, self-regulation interventions are most effective when they fit individuals' natural inclinations (Peetz & Davydenko, 2021). This study indicates that many parents are already using some aspects of MCII and are therefore more likely to benefit from tailored parenting interventions based around MCII.

Actively training individuals in MCII can benefit goal striving in several contexts (Wang et al., 2021). MCII as a trained technique is more than the sum of its parts. Engaging in only some components of mental contrasting or engaging in mental contrasting in the wrong order (e.g., by contrasting obstacles in reality before fantasizing about a desired outcome) can be ineffective or even detrimental to goal pursuit (Oettingen, 2012). We conducted ancillary analyses to gauge whether dwelling on obstacles or indulging in fantasies about the future influenced the results (online [supplemental materials](#)). The pattern of results did not change for parenting goals, but the relation between autonomous motives and effort was no longer significant for competing life goals after removing instances of either dwelling or indulging. Indulging and dwelling can deplete resources for goal striving (Oettingen & Reininger, 2016). When these cognitive patterns are present, other factors, such as autonomous motivation, may be particularly important for promoting effort. Follow-up research will do well to validate our measure of spontaneously occurring MCII and to address relations between motives and alternative cognitive patterns (e.g., indulging/dwelling).

Strengths, Limitations, and Future Directions

The bulk of the literature has considered goal striving at the between-person level. Our study used experience sampling to examine coping processes in goal striving at both the within- and between-person levels, which is necessary given the large within-person variability in goal progress, facilitation, and interference observed here. By investigating multiple goals, we were able to

compare how these processes differentially influence goal striving in distinct but interrelated life contexts.

Nevertheless, our work has limitations. First, the data are correlational and relied on self-reported data. We based our models on theory (Ntoumanis & Sedikides, 2018; Sheldon & Elliot, 1999), but we cannot directly infer causality. Experimental evidence indicates that MCII and goal motives can influence goal progress (Sheeran et al., 2020; Wang et al., 2021). Regardless, further work is needed to establish causal relations between the model variables. Second, to minimize potential recall biases and reduce participant burden, we did not ask participants to recall the order in which they engaged in MCII-like cognitions. Consequently, the features we measured represent key cognitive components of MCII, but should not be conflated with MCII as a trained exercise. Additionally, our measures may have been limited by inaccuracies due to poor access to internal thought processes or unreliable recall (Nisbett & Wilson, 1977). Additional empirical validation is needed to assert whether high usage of the three cognitive features measured here (mental imagery, reflection on obstacles, use of implementation intention planning) is predictive of spontaneous usage of true MCII. Researchers have used text-based analysis to infer spontaneously occurring mental contrasting (Sevincer & Oettingen, 2013). This was not feasible given our experience sampling methodology, but represents an alternative method for assessing spontaneous MCII and could be useful for validating the approach used here. Finally, a large number of participants dropped out of the second measurement burst. An additional measurement burst would have allowed us to establish our models longitudinally and test how participants shift their goal-striving strategies as they face new challenges. Implementing the intended dual measurement burst would provide a richer picture of multiple goal striving in parents and should be re-attempted in the future.

References

- Arend, M. G., & Schäfer, T. (2019). Statistical power in two-level models: A tutorial based on Monte Carlo simulation. *Psychological Methods, 24*(1), 1–19. <https://doi.org/10.1037/met0000195>
- Armitage, C. J., Walsh, T., Mooney, J., Tierney, S., & Callery, P. (2020). Proof of concept trial for a new theory-based intervention to promote child and adult behavior change. *Journal of Behavioral Medicine, 43*(1), 80–87. <https://doi.org/10.1007/s10865-019-00061-0>
- Asparouhov, T., & Muthén, B. (2021). Bayesian Estimation of single and multilevel models with latent variable interactions. *Structural Equation Modeling: A Multidisciplinary Journal, 28*(2), 314–328. <https://doi.org/10.1080/10705511.2020.1761808>
- Barlow, M. A., Wrosch, C., & McGrath, J. J. (2020). Goal adjustment capacities and quality of life: A meta-analytic review. *Journal of Personality, 88*(2), 307–323. <https://doi.org/10.1111/jopy.12492>
- Bieleke, M., & Keller, L. (2021). Individual differences in if-then planning: Insights from the development and application of the if-then planning scale (ITPS). *Personality and Individual Differences, 170*, Article 110500. <https://doi.org/10.1016/j.paid.2020.110500>
- Brandstätter, V., & Bernecker, K. (2022). Persistence and disengagement in personal goal pursuit. *Annual Review of Psychology, 73*(1), 271–299. <https://doi.org/10.1146/annurev-psych-020821-110710>
- Brandstätter, J., & Rothermund, K. (2002). The life-course dynamics of goal pursuit and goal adjustment: A two-process framework. *Developmental Review, 22*(1), 117–150. <https://doi.org/10.1006/dev.2001.0539>

- Brickell, T. A., Chatzisarantis, N. L., & Pretty, G. M. (2006). Using past behaviour and spontaneous implementation intentions to enhance the utility of the theory of planned behaviour in predicting exercise. *British Journal of Health Psychology, 11*(2), 249–262. <https://doi.org/10.1348/135910705X52471>
- Carver, C. S., & Scheier, M. F. (2005). Engagement, disengagement, coping, and catastrophe. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 527–547). Guilford Publications.
- Dieleman, L. M., Soenens, B., Prinzie, P., De Clercq, L., & De Pauw, S. S. (2021). Parenting children with cerebral palsy: A longitudinal examination of the role of child and parent factors. *Exceptional Children, 87*(3), 369–390. <https://doi.org/10.1177/0014402920986462>
- Gabriel, A. S., Podsakoff, N. P., Beal, D. J., Scott, B. A., Sonnentag, S., Trougakos, J. P., & Butts, M. M. (2019). Experience sampling methods: A discussion of critical trends and considerations for scholarly advancement. *Organizational Research Methods, 22*(4), 969–1006. <https://doi.org/10.1177/1094428118802626>
- Gaudreau, P., & Blondin, J. P. (2002). Development of a questionnaire for the assessment of coping strategies employed by athletes in competitive sport settings. *Psychology of Sport and Exercise, 3*(1), 1–34. [https://doi.org/10.1016/S1469-0292\(01\)00017-6](https://doi.org/10.1016/S1469-0292(01)00017-6)
- 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*(5), 507–528. <https://doi.org/10.1080/10615806.2011.628015>
- Geldhof, G. J., Preacher, K. J., & Zyphur, M. J. (2014). Reliability estimation in a multilevel confirmatory factor analysis framework. *Psychological Methods, 19*(1), 72–91. <https://doi.org/10.1037/a0032138>
- Gollwitzer, P. M., & Schaal, B. (1998). Metacognition in action: The importance of implementation intentions. *Personality and Social Psychology Review, 2*(2), 124–136. https://doi.org/10.1207/s15327957pspr0202_5
- Gray, J. S., Ozer, D. J., & Rosenthal, R. (2017). Goal conflict and psychological well-being: A meta-analysis. *Journal of Research in Personality, 66*, 27–37. <https://doi.org/10.1016/j.jrp.2016.12.003>
- Haase, C. M., Singer, T., Silbereisen, R. K., Heckhausen, J., & Wrosch, C. (2021). Well-being as a resource for goal reengagement: Evidence from two longitudinal studies. *Motivation Science, 7*(1), 21–31. <https://doi.org/10.1037/mot0000199>
- Healy, L. C., Ntoumanis, N., & Duda, J. L. (2016). Goal motives and multiple-goal striving in sport and academia: A person-centered investigation of goal motives and inter-goal relations. *Journal of Science and Medicine in Sport, 19*(12), 1010–1014. <https://doi.org/10.1016/j.jsams.2016.03.001>
- Healy, L. C., Ntoumanis, N., van Zanten, J. J. V., & Paine, N. (2014). Goal striving and well-being in sport: The role of contextual and personal motivation. *Journal of Sport and Exercise Psychology, 36*(5), 446–459. <https://doi.org/10.1123/jsep.2013-0261>
- Heckhausen, J., Wrosch, C., & Schulz, R. (2010). A motivational theory of life-span development. *Psychological Review, 117*(1), 32–60. <https://doi.org/10.1037/a0017668>
- Heckhausen, J., Wrosch, C., & Schulz, R. (2019). Agency and motivation in adulthood and old age. *Annual Review of Psychology, 70*(1), 191–217. <https://doi.org/10.1146/annurev-psych-010418-103043>
- Herrmann, M., Brandstätter, V., & Wrosch, C. (2019). Downgrading goal-relevant resources in action crises: The moderating role of goal reengagement capacities and effects on well-being. *Motivation and Emotion, 43*(4), 535–553. <https://doi.org/10.1007/s11031-019-09755-z>
- Ilies, R., Liu, X.-Y., Liu, Y., & Zheng, X. (2017). Why do employees have better family lives when they are highly engaged at work? *Journal of Applied Psychology, 102*(6), 956–970. <https://doi.org/10.1037/ap10000211>
- Jungert, T., Landry, R., Joussemet, M., Mageau, G., Gingras, I., & Koestner, R. (2015). Autonomous and controlled motivation for parenting: Associations with parent and child outcomes. *Journal of Child and Family Studies, 24*(7), 1932–1942. <https://doi.org/10.1007/s10826-014-9993-5>
- Kappes, A., & Oettingen, G. (2014). The emergence of goal pursuit: Mental contrasting connects future and reality. *Journal of Experimental Social Psychology, 54*, 25–39. <https://doi.org/10.1016/j.jesp.2014.03.014>
- Kappes, A., Wendt, M., Reinelt, T., & Oettingen, G. (2013). Mental contrasting changes the meaning of reality. *Journal of Experimental Social Psychology, 49*(5), 797–810. <https://doi.org/10.1016/j.jesp.2013.03.010>
- Klug, H. J., & Maier, G. W. (2015). Linking goal progress and subjective well-being: A meta-analysis. *Journal of Happiness Studies, 16*(1), 37–65. <https://doi.org/10.1007/s10902-013-9493-0>
- Koval, P., Hinton, J., Dozo, N., Gleeson, J., Alvarez, M., Harrison, A., Vu, D., Susanto, R., Jayaputera, G., & Sinnott, R. (2019). *SEMA3: Smartphone Ecological Momentary Assessment* (Version 3) [Computer software]. <http://www.sema3.com>
- Kung, F. Y. H., & Scholer, A. A. (2020). The pursuit of multiple goals. *Social and Personality Psychology Compass, 14*(1), Article e12509. <https://doi.org/10.1111/spc3.12509>
- Kung, F. Y. H., & Scholer, A. A. (2021). Moving beyond two goals: An integrative review and framework for the study of multiple goals. *Personality and Social Psychology Review, 25*(2), 130–158. <https://doi.org/10.1177/1088868320985810>
- Kuvaas, B., Buch, R., Weibel, A., Dysvik, A., & Nerstad, C. G. L. (2017). Do intrinsic and extrinsic motivation relate differently to employee outcomes? *Journal of Economic Psychology, 61*, 244–258. <https://doi.org/10.1016/j.joep.2017.05.004>
- Lansford, J. E. (2022). Annual research review: Cross-cultural similarities and differences in parenting. *Journal of Child Psychology and Psychiatry, 63*(4), 466–479. <https://doi.org/10.1111/jcpp.13539>
- Legrand, E., Bieleke, M., Gollwitzer, P. M., & Mignon, A. (2017). Nothing will stop me? Flexibly tenacious goal striving with implementation intentions. *Motivation Science, 3*(2), 101–118. <https://doi.org/10.1037/mot0000050>
- Louro, M. J., Pieters, R., & Zeelenberg, M. (2007). Dynamics of multiple-goal pursuit. *Journal of Personality and Social Psychology, 93*(2), 174–193. <https://doi.org/10.1037/0022-3514.93.2.174>
- Mann, T., De Ridder, D., & Fujita, K. (2013). Self-regulation of health behavior: Social psychological approaches to goal setting and goal striving. *Health Psychology, 32*(5), 487–498. <https://doi.org/10.1037/a0028533>
- Marquardt, M. K., Oettingen, G., Gollwitzer, P. M., Sheeran, P., & Liepert, J. (2017). Mental contrasting with implementation intentions (MCII) improves physical activity and weight loss among stroke survivors over one year. *Rehabilitation Psychology, 62*(4), 580–590. <https://doi.org/10.1037/rep0000104>
- Martiny-Huenger, T., Damanskyy, Y., & Parks-Stamm, E. J. (2022). From thought to action: On the relevance of including situational cues in thought about intended actions. *PLoS ONE, 17*(2), Article e0264342. <https://doi.org/10.1371/journal.pone.0264342>
- Milyavskaya, M., & Koestner, R. (2011). Psychological needs, motivation, and well-being: A test of self-determination theory across multiple domains. *Personality and Individual Differences, 50*(3), 387–391. <https://doi.org/10.1016/j.paid.2010.10.029>
- Moshontz, H., Hoyle, R. H., Marsh, J. S., Fitzsimmons, G., Komoski, S., Andrade, F., Novice, M., & Kwiatek, S. (2021). Resisting, recognizing, and returning: A three-component model and review of persistence in episodic goals. *Social and Personality Psychology Compass, 15*(1), Article e12576. <https://doi.org/10.1111/spc3.12576>
- Muthén, B., & Muthén, L. (2019). *Mplus user's guide* (8th ed.). Muthén & Muthén.
- Neal, A., Ballard, T., & Vancouver, J. B. (2017). Dynamic self-regulation and multiple-goal pursuit. *Annual Review of Organizational Psychology and Organizational Behavior, 4*(1), 401–423. <https://doi.org/10.1146/annurev-orgpsych-032516-113156>

- Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84(3), 231–259. <https://doi.org/10.1037/0033-295X.84.3.231>
- Ntoumanis, N., Edmunds, J., & Duda, J. L. (2009). Understanding the coping process from a self-determination theory perspective. *British Journal of Health Psychology*, 14(2), 249–260. <https://doi.org/10.1348/135910708X349352>
- Ntoumanis, N., Healy, L. C., Sedikides, C., Duda, J., Stewart, B., Smith, A., & Bond, J. (2014). When the going gets tough: The “why” of goal striving matters. *Journal of Personality*, 82(3), 225–236. <https://doi.org/10.1111/jopy.12047>
- Ntoumanis, N., Healy, L. C., Sedikides, C., Smith, A., & Duda, J. (2014). Self-regulatory responses to unattainable goals: The role of goal motives. *Self and Identity*, 13(5), 594–612. <https://doi.org/10.1080/15298868.2014.889033>
- Ntoumanis, N., & Sedikides, C. (2018). Holding on to the goal or letting it go and moving on? A tripartite model of goal striving. *Current Directions in Psychological Science*, 27(5), 363–368. <https://doi.org/10.1177/0963721418770455>
- Oettingen, G. (2000). Expectancy effects on behavior depend on self-regulatory thought. *Social Cognition*, 18(2), 101–129. <https://doi.org/10.1521/soco.2000.18.2.101>
- Oettingen, G. (2012). Future thought and behaviour change. *European Review of Social Psychology*, 23(1), 1–63. <https://doi.org/10.1080/10463283.2011.643698>
- Oettingen, G., & Gollwitzer, P. M. (2010). Strategies of setting and implementing goals: Mental contrasting and implementation intentions. In J. E. Maddux (Ed.), *Social psychological foundations of clinical psychology* (pp. 114–135). Guilford Press.
- Oettingen, G., & Gollwitzer, P. M. (2022). Commentary: Processes of disengagement—letting go from the wanted future, the missed-out past, and coping with inevitable endings. *Motivation and Emotion*, 46(6), 894–898. <https://doi.org/10.1007/s11031-022-09986-7>
- Oettingen, G., & Reininger, K. M. (2016). The power of prospection: Mental contrasting and behavior change. *Social and Personality Psychology Compass*, 10(11), 591–604. <https://doi.org/10.1111/spc3.12271>
- Peez, J., & Davydenko, M. (2021). Financial self-control strategy use: Generating personal strategies reduces spending more than learning expert strategies. *Journal of Experimental Social Psychology*, 97, Article 104189. <https://doi.org/10.1016/j.jesp.2021.104189>
- Preacher, K. J., Zyphur, M. J., & Zhang, Z. (2010). A general multilevel SEM framework for assessing multilevel mediation. *Psychological Methods*, 15(3), 209–233. <https://doi.org/10.1037/a0020141>
- Riddell, H., Sedikides, C., Gucciardi, D. F., Ben, J., Thøgersen-Ntoumani, C., & Ntoumanis, N. (2022). Goal motives and mental contrasting with implementation intentions facilitate strategic goal persistence and disengagement. *Journal of Applied Social Psychology*, 52(11), 1094–1116. Advance online publication. <https://doi.org/10.1111/jasp.12915>
- Riediger, M., & Freund, A. M. (2004). Interference and facilitation among personal goals: Differential associations with subjective well-being and persistent goal pursuit. *Personality and Social Psychology Bulletin*, 30(12), 1511–1523. <https://doi.org/10.1177/0146167204271184>
- Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Guilford Press. <https://doi.org/10.1521/978.14625/28806>
- Sansone, C., & Thoman, D. B. (2006). Maintaining activity engagement: Individual differences in the process of self-regulating motivation. *Journal of Personality*, 74(6), 1697–1720. <https://doi.org/10.1111/j.1467-6494.2006.00425.x>
- Scobbie, L., Thomson, K., Pollock, A., & Evans, J. (2021). Goal adjustment by people living with long-term conditions: A scoping review of literature published from January 2007 to June 2018. *Neuropsychological Rehabilitation*, 31(8), 1314–1345. <https://doi.org/10.1080/09602011.2020.1774397>
- Segerstrom, S. C., & Solberg Nes, L. (2006). When goals conflict but people prosper: The case of dispositional optimism. *Journal of Research in Personality*, 40(5), 675–693. <https://doi.org/10.1016/j.jrp.2005.08.001>
- Senécal, C., Vallerand, R. J., & Guay, F. (2001). Antecedents and outcomes of work-family conflict: Toward a motivational model. *Personality and Social Psychology Bulletin*, 27(2), 176–186. <https://doi.org/10.1177/0146167201272004>
- Sevincer, A. T., & Oettingen, G. (2013). Spontaneous mental contrasting and selective goal pursuit. *Personality and Social Psychology Bulletin*, 39(9), 1240–1254. <https://doi.org/10.1177/0146167213492428>
- Sevincer, A. T., Plakides, A., & Oettingen, G. (2023). Mental contrasting and energization transfer to low-expectancy tasks. *Motivation and Emotion*, 47(1), 85–99. <https://doi.org/10.1007/s11031-022-09963-0>
- Sheeran, P., Wright, C. E., Avishai, A., Villegas, M. E., Lindemans, J. W., Klein, W. M., Rothman, A. J., Miles, E., & Ntoumanis, N. (2020). Self-determination theory interventions for health behavior change: Meta-analysis and meta-analytic structural equation modeling of randomized controlled trials. *Journal of Consulting and Clinical Psychology*, 88(8), 726–737. <https://doi.org/10.1037/ccp0000501>
- 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(3), 482–497. <https://doi.org/10.1037/0022-3514.76.3.482>
- Shockley, K. M., Shen, W., DeNunzio, M. M., Arvan, M. L., & Knudsen, E. A. (2017). Disentangling the relationship between gender and work–family conflict: An integration of theoretical perspectives using meta-analytic methods. *Journal of Applied Psychology*, 102(12), 1601–1635. <https://doi.org/10.1037/apl0000246>
- Smith, A., Ntoumanis, N., Duda, J., & Vansteenkiste, M. (2011). Goal striving, coping, and well-being: A prospective investigation of the self-concordance model in sport. *Journal of Sport and Exercise Psychology*, 33(1), 124–145. <https://doi.org/10.1123/jsep.33.1.124>
- Tomasik, M. J., Silbereisen, R. K., & Heckhausen, J. (2010). Is it adaptive to disengage from demands of social change? Adjustment to developmental barriers in opportunity-deprived regions. *Motivation and Emotion*, 34(4), 384–398. <https://doi.org/10.1007/s11031-010-9177-6>
- Van Osch, L., Reubsat, A., Lechner, L., & de Vries, H. (2008). The formation of specific action plans can enhance sun protection behavior in motivated parents. *Preventive Medicine*, 47(1), 127–132. <https://doi.org/10.1016/j.ypmed.2008.02.025>
- Wang, G., Wang, Y., & Gai, X. (2021). A meta-analysis of the effects of mental contrasting with implementation intentions on goal attainment. *Frontiers in Psychology*, 12, Article 565202. <https://doi.org/10.3389/fpsyg.2021.565202>
- Wrosch, C., & Scheier, M. F. (2020). Adaptive self-regulation, subjective well-being, and physical health: The importance of goal adjustment capacities. *Advances in Motivation Science*, 7, 199–238. <https://doi.org/10.1016/bs.adms.2019.07.001>
- Wrosch, C., Scheier, M. F., Carver, C. S., & Schulz, R. (2003). The importance of goal disengagement in adaptive self-regulation: When giving up is beneficial. *Self and Identity*, 2(1), 1–20. <https://doi.org/10.1080/15298860309021>
- Zyphur, M. J., Narayanan, J., Koh, G., & Koh, D. (2009). Testosterone–status mismatch lowers collective efficacy in groups: Evidence from a slope-as-predictor multilevel structural equation model. *Organizational Behavior and Human Decision Processes*, 110(2), 70–79. <https://doi.org/10.1016/j.obhdp.2009.05.004>

Received August 19, 2022

Revision received January 24, 2023

Accepted January 25, 2023 ■