

Clinical Psychology: Science and Practice

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Online First Publication, April 16, 2026. <https://dx.doi.org/10.1037/cps0000343>

CITATION

Roberts, H., Moberly, N. J., Wood, K., Meechem, S., O'Rourke, S., Howard, M., & Watkins, E. R. (2026). Finding flow: Cultivating flow states as a counterpoint to depressive rumination. *Clinical Psychology: Science and Practice*. Advance online publication. <https://dx.doi.org/10.1037/cps0000343>

Finding Flow: Cultivating Flow States as a Counterpoint to Depressive Rumination

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The defining feature of emotion regulation is the activation of a goal to influence the trajectory of emotion. Emotion regulation strategies often involve efforts to either decrease negative emotions or increase positive ones and are associated with a range of possible outcomes. Depressive rumination is an emotion regulation strategy involving repetitive negative thinking about oneself, feelings, and personal concerns and is a key risk factor for depression. Flow is a state in which an individual experiences intense, focused concentration on an intrinsically rewarding activity, accompanied by feelings of enjoyment. Perceived progress toward goals underpins both rumination and flow: perceived unsatisfactory goal progress causes state rumination, whereas goals that are well aligned to abilities provide the setting conditions for flow states. This narrative review conceptualizes the cultivation of flow experiences as an emotion regulation strategy that acts as a counterpoint to rumination with promise for the prevention and treatment of depression. We first define rumination and flow. We then review the theoretical and empirical literature examining the relationship between rumination and flow states. We present a novel model that characterizes the phenomenology of flow as a counterpoint to rumination, focusing on elucidating shared and antagonistic dimensions. Finally, we identify key attentional, affective, motivational, and behavioral mechanisms by which the cultivation of flow states might act as an emotion regulation strategy to reduce susceptibility to rumination and explore implications for the treatment of rumination.

Public Health Significance Statement

Flow describes the enjoyable experience of being fully absorbed in an activity that is at just the right level of difficulty for one's skills. The intentional practice of cultivating flow experiences increases positive emotion, decreases negative emotion, and there is promising evidence that it is uniquely beneficial for treating rumination and depression. We propose that flow acts as a counterpoint to rumination, we review evidence to support this and identify the processes by which the cultivation of flow might change emotional experience and reduce susceptibility to rumination.

Keywords: flow, rumination, depression, emotion regulation

Emotion regulation strategies typically involve attempts to either down-regulate or up-regulate positive or negative emotions, which may produce helpful or unhelpful outcomes (Gross, 2015).

These strategies may be enacted with or without conscious awareness and can take a variety of forms. Rumination is an emotion regulation strategy that involves repetitive negative thinking about

David Preece served as action editor.

Because this research was funded in whole or in part by the Wellcome Trust; (Grant 226782/Z/22/Z).

This work was supported by the Wellcome Trust (Grant 226782/Z/22/Z). Edward R. Watkins reports royalties from a treatment manual for rumination-focused cognitive behavioral therapy published by Guilford Press and licensing of rumination-focused cognitive behavioral therapy for Internet treatment packages.

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Henrietta Roberts served as lead for conceptualization, writing—original draft, and writing—review and editing. Nicholas J. Moberly served in a supporting role for conceptualization, writing—original draft, and writing—review and editing. Katie Wood served in a supporting role for writing—review and editing. Sabrina Meechem served in a supporting role for writing—review and editing. Sarah O'Rourke served in a supporting role for writing—review and editing. Martin Howard served in a supporting role for writing—review and editing. Edward R. Watkins served as lead for funding acquisition and served in a supporting role for conceptualization, writing—original draft, and writing—review and editing.

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one's self, feelings, personal concerns, and upsetting experiences and is associated with numerous unhelpful outcomes and increased risk for depression (Watkins & Roberts, 2020). There is emerging theoretical and empirical evidence that practicing and cultivating flow experiences can be uniquely beneficial in the treatment and management of clinically significant rumination and depression (Watkins, 2016; Watkins et al., 2023). The intentional practice of cultivating or engaging in flow experiences increases positive emotion and decreases negative emotion. Thus, intentionally practicing flow experiences is conceptualized as a deliberate emotional regulation strategy that demonstrates promise for the treatment of rumination and depression.

This narrative review synthesizes theory and empirical evidence to propose a conceptual framework for understanding the cultivation of flow experiences as an emotion regulation strategy that acts as a counterpoint to rumination. We conducted literature searches across a number of academic databases (Web of Science, PsycINFO, Medline [Ovid]), using terms aimed at identifying studies of rumination (e.g., ruminat*, repetitive thought, worry*, depress*) and flow (e.g., flow, optimal experience, absorb*) as well as searching reference lists of core books (e.g., Csikszentmihalyi, 1990), reviews (e.g., Nolen-Hoeksema et al., 2008), and empirical papers (e.g., Watkins et al., 2023) for relevant articles. Literature that describes the phenomenological properties of, antecedents to, or affective outcomes of flow and rumination was considered relevant. In addition, correlation, longitudinal, experimental, and treatment studies that examined the relationship between flow and rumination were included. An initial narrative synthesis was conducted, organized by (a) phenomenological features (shared or distinct), (b) common dimensional antecedents or setting conditions, (c) affective consequences, and (d) evidence directly relating flow and rumination within a single study. Following this, the evidence was further synthesized and refined to develop a conceptual framework outlining (a) the shared and distinct phenomenological properties of flow and rumination, (b) the antithetical motivational antecedents of each, (c) affective outcomes of each, and (d) treatment implications.

This review begins by describing the phenomenology of rumination and flow states, highlighting both shared and distinct characteristics of these emotion regulation strategies (Tables 1 and 2). Next, we consider their core antecedents (Tables 1 and 3) and synthesize theoretical and empirical evidence to contrast key motivational antecedents. We propose six key dimensions of

goal-oriented cognition for which flow functions as a counterpoint to rumination. We then summarize the affective outcomes of each strategy. We review treatment studies demonstrating the unique benefits of deliberately cultivating flow states. Finally, we propose mechanisms by which flow is predicted to reduce rumination and describe strategies to support the cultivation of flow, concluding with future directions for the field.

Phenomenology of Rumination and Flow States

Rumination

Rumination describes “a class of conscious thoughts that revolve around a common instrumental theme and that recur in the absence of immediate environmental demands” (Martin & Tesser, 1996, p. 1). These recurring thoughts can have helpful or unhelpful outcomes for emotion regulation (Watkins, 2008). In particular, when individuals perceive unsatisfactory goal progress, this causes and maintains negative state rumination¹ (e.g., Martin & Tesser, 1996; Moberly & Watkins, 2010; Roberts et al., 2013; Watkins & Roberts, 2020). Such rumination is hypothesized to function as an attempt at problem-solving, aimed at restoring satisfactory goal progress. However, when it fails to resolve the perceived discrepancy or facilitate disengagement from the goal, it leads to perseverative thinking and intensifies negative affect (Carver, 1996; Watkins, 2008).

Depressive rumination is a subtype of rumination and a typically maladaptive emotion regulation strategy that has been shown to maintain and exacerbate negative mood states and is a risk factor for depression, as well as other forms of psychopathology (see Watkins & Roberts, 2020 for a detailed review). Although most people experience relatively brief episodes of rumination in the context of difficult life experiences, losses, or setbacks, for some individuals, rumination develops into a relatively automatic learnt response to low mood and symptoms of

¹ Negative rumination can be contrasted with positive rumination, which is instigated by a better than anticipated rate of goal progress and is characterized by repetitive thoughts that are centred on positive affective states (e.g., Feldman et al., 2008).

Table 1
Summary of the Core Feature and Antecedents of Flow

Core features of flow	Three component model
An intense and focused concentration on one's activity in the moment	Absorption
The merging of action and awareness	Absorption
Loss of reflective self-consciousness	Absorption
Experience of one's activity as intrinsically rewarding	Enjoyment
Feeling in control of one's actions pertaining to the activity and that one has the requisite skills and resources	Perceived demand-skill balance
Temporal distortion (the sense of time speeding or slowing or losing awareness of the time passing)	Absorption
Core setting conditions for flow	
Clear proximal goals for one's activity	Perceived demand-skill balance
Immediate feedback regarding one's progress	Perceived demand-skill balance
The optimal balance of skills and challenge, such that the activity neither overmatches nor underutilizes one's abilities	Perceived demand-skill balance

Table 2
The Phenomenological Properties of Flow and Rumination

Three component model of flow	Present in flow	Present in rumination
Absorption	Perception of one's thoughts and actions "flowing" progressively Fully absorbed in present-moment experience/activity	Qualitatively different to flow involving becoming "lost" in one's thoughts and reduced present-moment engagement Perception of circularity and repetition of thoughts and behaviors
Enjoyment	Yes; experienced as autonomously motivated	No; experienced as governed by controlled motives
Perceived demand-skill balance	Optimal Motivational value and expectancy of success are both high	Problematic Motivational value is high and expectancy of success is low
Core features of maladaptive rumination		
Process vs. purpose orientation	Process	Purpose
Abstract vs. concrete goal construals	Clear proximal (concrete) goals for one's activity are salient	Abstract goal construals are salient
Internal (self) vs. external reference value	External	Internal
Valence	Positive/neutral	Negative

depression (Nolen-Hoeksema, 1991; Nolen-Hoeksema et al., 2008; Watkins & Roberts, 2020). Depressive rumination is characterized by attentional narrowing, orientating toward the self and one's problems, and is typically accompanied by negative affective states (Whitmer & Gotlib, 2013). Attending to problems is an adaptive feature of self-regulation that can facilitate problem-solving (e.g., Carver & Scheier, 1998; Martin & Tesser, 1996). However, depressive rumination has been demonstrated to impede problem-solving and have unhelpful self-regulatory and emotional outcomes (see Watkins, 2008).

Trait depressive rumination is typically assessed with the Response Styles Questionnaire (RSQ; Nolen-Hoeksema & Morrow, 1991). State rumination is measured (a) in real life via ecological momentary assessment and (b) in the laboratory by cueing people with an unresolved personal goal and using probes to measure subsequent thoughts about that unresolved goal when completing

an unrelated activity (e.g., Michel-Kröhler et al., 2023; Roberts et al., 2013). Collectively, studies using these approaches triangulate extensive evidence that (a) problematic goal progress increases state rumination; (b) state rumination and poor regulation of negative affect each drive the other; and (c) trait depressive rumination predicts an increased propensity to engage in state rumination (see Watkins & Roberts, 2020 for a detailed review).

Watkins' (2008) comprehensive review of adaptive and maladaptive repetitive thought identified four core phenomenological characteristics that can distinguish adaptive and maladaptive rumination (see Table 2): orientation to process versus purpose, level of goal construal (abstract or concrete), internal versus external reference value, and thought valence (positive or negative). Importantly, all four of these dimensions of maladaptive rumination can be contrasted with the phenomenological properties of flow, which function as a counterpoint.

Flow

Flow is characterized as a state in which an individual is completely absorbed in an unfolding autotelic activity, accompanied by the absence of reflective self-consciousness (Csikszentmihalyi, 1990; Engeser et al., 2021). Autotelic derives from the Greek *auto* (self) and *telos* (goal) and refers to participation in activities that are their own purpose or reward. There is consensus that the phenomenological experience of flow comprises six core features (see Table 1; Abuhamdeh, 2020; Csikszentmihalyi, 1975; Nakamura & Csikszentmihalyi, 2016). The first three and sixth features describe aspects of being totally absorbed or immersed in one's momentary experience; the fourth captures the autotelic nature of flow, central to Csikszentmihalyi's original conception; and the fifth feature captures the perceived demand-skill balance, perhaps the most studied component of flow. Three core setting conditions or antecedents for flow have been specified (see Table 1; Abuhamdeh, 2020; Csikszentmihalyi, 1990; Nakamura & Csikszentmihalyi, 2016). Peifer and Engeser (2021) synthesized the literature on the

Table 3
Dimensions of Goal Pursuit that Differentially Predict Flow and Rumination

Dimension of goal pursuit	Antecedent role in flow	Antecedent role in rumination
Autonomous vs. controlled-goal motives	Intrinsically rewarding or autonomously motivated	Controlled-goal motives
Goal orientation	Mastery and growth mindset	Performance
Approach or avoidance focus	Approach	Avoidance
Goal expectancies and perceived rate of goal progress	Realistic, positive, attainable, balanced between ability and challenge	Unrealistic, unattainable, unbalanced demand-skill ratio
Goal construal	Process-oriented, concrete, situationally specific	Purpose-oriented, abstract, decontextualized
Perceptual input	External	Internal

components and antecedents of flow and hypothesized three core dimensions—absorption, perceived demand-skill balance, and enjoyment—to subsume all six features and three antecedents (Table 1). Peifer and Engeser (2021) thus defined flow as “the enjoyable experience of full absorption in an activity in which the demands are perceived as optimally compatible with one’s skills” (p. 424). Flow experiences are widely characterized as beneficial to well-being and are robustly associated with positive emotional, motivational, and cognitive states (e.g., Kowal & Fortier, 1999; Landhäuser & Keller, 2012; Olčar et al., 2019). Importantly, flow is not a product of low stress or relaxation but arises during deeply absorbing activities and is linked to the perception of goal-related challenges and opportunities to progress. When the pursuit of goals is misaligned with our abilities and resources, it is conducive to either boredom or poor goal progress and rumination. In contrast, goals that are well aligned with our abilities and offer immediate feedback on our progress provide the setting conditions for flow (Abuhamdeh, 2020). Having clear proximal goals and immediate feedback on one’s progress is especially important. This minimizes uncertainty and doubt and enables discrepancies to be resolved quickly, thus reducing the likelihood of rumination and providing the best opportunity for a satisfactory rate of goal progress.

Conceptual tension exists within the literature regarding the relationships between flow, enjoyment, and the autotelic experience. Perhaps surprisingly, enjoyment and happiness are not present in the widely agreed component models of flow (e.g., Nakamura & Csikszentmihalyi, 2012), despite being explicitly referenced in most characterizations of the flow experience (e.g., Csikszentmihalyi, 1990). Csikszentmihalyi (1997) asserted that flow does not always involve happiness or enjoyment in the moment, suggesting that the experience may be rewarding in other ways. Consistent with this position, studies indicate that activating mood states—those that produce high levels of motivation and facilitate goal engagement—are also important for experiencing flow (e.g., Bloch, 2000; Fullagar & Kelloway, 2009; van der Linden et al., 2021). Prominent authors in the field (e.g., Abuhamdeh, 2020; Peifer & Engeser, 2021) propose that it is the momentary experience of enjoyment in the flow state that underlies its self-reinforcing properties. They conceptualize enjoyment as a product of the perception of self-efficacy and self-competence as opposed to positive valence (Abuhamdeh, 2021a). Thus, the self-reinforcing properties of flow can be related to the fundamental need for self-determination, as opposed to experiencing hedonic benefit from one’s activity (Ryan & Deci, 2000). This is of particular importance for understanding how flow and rumination relate to one another because low perceived self-determination and self-efficacy, as well as reduced positive affect and increased negative affect are implicated in rumination and depression (e.g., Clark & Watson, 1991; Feldman et al., 2008; Thomsen, 2006).

There is no consensus on the operationalization and measurement of flow (Norsworthy et al., 2021) and whether it is a discrete state (present vs. not present) or a continuous state. Peifer and Engeser (2021) propose a threshold, above which an experience is conceptualized as flow, with the intensity of such flow experiences being on a continuum. This suggests that flow can be assessed both in terms of its frequency (presence or absence) and intensity

(along a continuum). One of the main approaches to measuring flow focuses on the balance of demand and skills and involves either measuring the frequency with which individuals report high demand, high skill situations or manipulating the demand-skill balance within an activity (e.g., Csikszentmihalyi, 1997). Experimental studies, systematic reviews, and a recent meta-analysis report a moderate association between flow and an optimal demand-skill balance, with this identified as one of two coherent antecedents (along with high motivation) to flow, and this has been found to be relatively robust when compared with other relevant dimensions (Engeser & Rheinberg, 2008; Fong et al., 2015: $z = 0.58$, 95% CI [0.55, 0.58]; Nicol, 2017: $\rho = 0.46$, 95% CI [0.41, 0.51]; Norsworthy et al., 2021). A second approach has been to ask people to report on how frequently they experience the different phenomenological components of flow as well as its antecedents (see Table 1), typically affording equal weighting to each component (Ullén et al., 2012) or to use questionnaires to classify experiences as either flow or not (e.g., the Flow Questionnaire; Csikszentmihalyi & Csikszentmihalyi, 1988). Finally, the Experience Sampling Method (ESM; Csikszentmihalyi, 2014), asks participants to rate dimensions of their momentary experience in everyday life and then analyses sampled moments where either the conditions for flow were present, or the flow state was reported to characterize that experience (e.g., Massimini & Carli, 2012). Across these three approaches, it is clear that the three core components of flow can be directly contrasted with the phenomenological properties of depressive rumination (see Table 2), and there are also notable areas of overlap.

Key Distinctions

Flow and rumination share several common and opposing features (see Table 2): both entail intense attentional focus, a relatively automatic maintenance of that focus, and a sense of becoming “lost” in the focus of one’s attention (present-moment activity in the case of flow states versus negative self-referential thoughts in the case of rumination). Thus, an intense self-perpetuating attentional focus is arguably common to flow and rumination, which contrasts with states such as mindfulness when one deliberately cultivates nonjudgmental observation of one’s consciousness (see Sheldon et al., 2015). However, attentional processing during flow and rumination is qualitatively distinct from one another: critically, within flow, thoughts, experiences, and ideas “flow” progressively in alignment with a desirable rate of progress toward goals and are immersed in present-moment experience. In contrast, during rumination, attentional processing is characterized by a circularity and stickiness of thinking aligned to perceived unsatisfactory progress and tends to be removed from present experience (e.g., analytical processing of past experiences; Carver & Scheier, 1998; Csikszentmihalyi, 1990).

Whereas flow is characterized by the experience of enjoyment and a strong expectation of success, rumination is marked by high motivational value but low expectancy for success and is experienced as uncontrollable and aversive. The phenomenological distinctions outlined in Table 2 on the dimensions of attentional focus and absorption (immersed in one’s present-moment activity or preoccupied by analytical thinking that is removed from one’s current activity), enjoyment, and expectancy of success between flow and rumination, help to shed light on why, whereas both

states are self-perpetuating, one is associated with adaptive emotion regulation outcomes, and the other with maladaptive ones. Critically, flow and rumination differ in core motivational and processual characteristics of goal pursuit (see Table 2), and their associated affective and self-regulation outcomes, with flow associated with positive affect and constructive outcomes, whereas rumination causally contributes to negative affect and unconstructive outcomes.

Goal Processes as a Setting Condition for Flow Versus Rumination

The successful pursuit of personally important goals contributes to well-being and a sense of purpose and meaning in our lives (e.g., Brunstein, 1993; Klinger, 1977; Klug & Maier, 2015). Flow and rumination differ on multiple important (and potentially overlapping) dimensions of goal pursuit, highlighting why flow may act as a counterpoint to rumination (Table 3). These include (a) whether goals are autonomously regulated (reflecting one's authentic interests and values and feeling inherently enjoyable and/or valuable to pursue) versus controlled regulation; (b) whether goal pursuit is oriented toward achieving mastery and developing skills versus demonstrating performance ability; (c) whether approach versus avoidance goals are salient; (d) expectancies of success, the perceived match between one's abilities and the difficulties of achieving the goal, and the perceived rate of goal progress; (e) whether the goal is represented by more abstract or concrete levels of construal including orientation towards the process goal pursuit versus the purpose of attaining a desired outcome; (f) whether goal progress is referenced against change in internal state or in external environment. We will address these in the following five sections (implications for achieving mastery and adopting approach goals are addressed under the same subheading due to the substantial overlap in theoretical and empirical literature investigating these constructs). Each section outlines the key implications for understanding the phenomenology of rumination and flow.

Autonomous Versus Controlled-Goal Motives

Goal motives influence both the experience of flow and rumination. Goal self-concordance (the degree to which one's goals represent one's authentic interests and values; Sheldon & Elliot, 1999) predicts goal effort, goal attainment, and attributions about one's ability to make satisfactory progress toward goals (Sheldon, 2014; Sheldon et al., 2022). The experience of one's activity as intrinsically rewarding is a defining feature of flow states (Csikszentmihalyi, 1975). As such, the pursuit of goals and activities that feel inherently enjoyable is associated with greater perceived and observed goal progress, and with increased experience of flow states (e.g., Engeser et al., 2005; Harris et al., 2023; Moberly & Dickson, 2016).

The flow literature typically conceptualized intrinsic motivation as residing in the activity itself (as opposed to its potential consequences). However, intrinsic motivation has also been characterized as arising from the psychological need for self-determination and autonomy (Deci & Ryan, 1980; Ryan & Deci, 2000) and with reference to goal orientations and whether goals are focused on mastery or performance, and approach or avoidance (Carver &

Scheier, 1998; Dweck, 1986; Elliot & Church, 1997). According to self-determination theory (Ryan & Deci, 2000), one may pursue a goal because it feels inherently enjoyable to do so (intrinsic motivation) or because one wholeheartedly values it (identified motivation). These two goal motives are described collectively as autonomous regulation and are associated with greater perceived goal progress (e.g., Moberly & Dickson, 2016; Sheldon & Elliot, 1998, 1999). Alternatively, one may pursue a goal because one would feel guilty or ashamed if one did not or because goal pursuit facilitates some extrinsic outcome (controlled regulation). Controlled regulation is associated with higher trait rumination, more state rumination after controlling for perceived goal progress, and prospectively predicts greater rumination over time (Luyckx et al., 2017; Moberly & Dickson, 2016; Thomsen et al., 2011). In contrast, pursuing goals that are autonomously regulated facilitates goal progress and the potential for flow states; the perception of a good rate of goal progress is conducive to the experience of flow; and the experience of flow states during goal pursuit facilitates progress (see also Abuhamdeh, 2021a, for a discussion of flow and cognitive evaluation theory).

Developing Mastery Versus Demonstrating Performance Ability

An important dimension of goal orientation is whether one's activity is motivated by achieving mastery or by demonstrating ability (i.e. a performance goal, see Vandewalle et al., 2019, for a review). Goal orientation theories derive from the observation that, following failure on an achievement goal, individuals typically respond in one of two ways: a pattern of helplessness and disengagement that is linked to the perception of low ability (performance orientation), and a mastery-oriented pattern characterized by engagement in new problem-solving strategies (Dweck, 1986; see also Dweck, 1999, Yeager & Dweck, 2020, for theory relevant to growth mindset).

The mastery-performance distinction has been integrated with theories of approach and avoidance motivation for achievement goals (Elliot, 1999) in an elaboration of the conditions that predict intrinsic motivation. Approach goal motivation is defined as "behaviour that is instigated or directed by a positive or desirable event or possibility" and avoidance motivation as "behaviour that is instigated or directed by a negative event or possibility" (Elliot, 1999, p. 170). Avoidance goals are particularly problematic because they do not indicate a positive direction to strive toward and are difficult to definitively resolve (e.g., Carver & Scheier, 1998). Consistent with this, high trait ruminators report more avoidance goals and individuals experiencing depression or anxiety typically report lower goal expectancies for avoiding negative outcomes than participants without a current mental health problem (e.g., Dickson et al., 2011, 2016; Dickson & Moberly, 2013). Avoidance goals are not conducive to flow states because they are concerned with moving away from an undesirable outcome (and perceived threat of that outcome occurring). As such, it is more difficult to track rate of progress on avoidance goals or to determine that progress is satisfactory. Consequently, there is evidence that avoidance goals undermine intrinsic motivation and increase performance-related anxiety (Elliot & Harackiewicz, 1996; Elliot & McGregor, 1999). Conversely, mastery-oriented achievement goals are compatible with activity-related incentives (e.g., to

master a new skill), which facilitate a motivational orientation to the process rather than the purpose of the activity and are thus conducive to absorption and flow experiences. This is in counterpoint to rumination, where perceived rate of progress toward (or away from) a particular outcome (and therefore orientation to the purpose or desired endpoint of an activity) is critical to the instigation of state rumination (Carver & Scheier, 1998).

Expectancy of Success, Demand-Skill Balance, and Perceived Goal Progress

Critical to the activation of both flow and rumination is the perception of one's ability to progress toward goals in a satisfactory manner (with low expectancies of success being linked to rumination and positive expectancies linked to flow). Within flow models, this is conceptualized in terms of perceiving a suitable balance between skills and task demands: Csikszentmihalyi (1990) argued that a central precondition for flow is that the perceived demands of one's current goal-relevant activity are well aligned to perceived existing skills, thereby affording opportunity for growth and utilization of one's skills. In contrast, control theories propose that the perception that one's desired rate of goal progress (inferred in part from perceived balance of skills, resources, and task demands) is discrepant with one's actual rate of progress initiates rumination (Carver & Scheier, 1998; Hyland, 1987; Roberts et al., 2013, 2020).

Perceptions about rate of goal progress also generate affect and influence whether goal strivings are experienced as enjoyable and rewarding (i.e., when occurring at an optimal or faster than desired rate of progress) or as a source of negative affect, distress, and rumination (i.e., due to perceived slower progress than desired, Carver & Scheier, 1998). There is evidence that flow-promoting experiences increase positive affect (e.g., Cseh et al., 2015; De Manzano et al., 2010; Fung & Jackson, 2024). Rumination about perceived poor goal progress is associated with negative affect, with evidence to suggest that this relationship is reciprocal (e.g., Jones et al., 2013; Moberly & Watkins, 2010; Roberts et al., 2020).

Goal expectancies (perceived likelihood of success) and the perceived rate of reducing the discrepancy between current and desired state are important determinants of goal strivings and effort and influence whether an individual disengages or increases effort when they perceive unsatisfactory goal progress (e.g., Duval et al., 1992). Self-efficacy and expectancies about one's prospects (outcome expectancies) have an interactive effect on effort invested in progressing toward one's goals (Prentice-Dunn & Jacobs, 1986). Increasing effort in response to increased task difficulty has been shown to play a role in the subjective experience of flow states (e.g., Lu et al., 2025). Progress-based models of flow hypothesis that when an individual perceives maximal opportunities for progress, this gives rise to a period of continuous progress and an associated flow state (Lu et al., 2024). Conversely, in the case of perceived unsatisfactory progress and negative goal expectancies, goal disengagement and withdrawal can be ultimately beneficial to self-regulation and emotional well-being if these expectancies are realistic (Wrosch, 2010). However, where the motivational value of the goal is high, disengagement is difficult, leading to a cycle of perseverative rumination and "painful engagement" with unattainable goals (Carver & Scheier, 1998; MacLeod, 2017). Goal expectancies and perceived rate of goal

progress thus can either shift an individual towards flow (if realistic, positive, attainable, balanced between ability and challenge) or toward rumination (if unrealistic, unattainable, unbalanced).

Level of Goal Construal

Watkins (2011) synthesized Control Theory, Action Identification Theory (AIT; Vallacher & Wegner, 1987) and Temporal Construal Theory (Trope & Liberman 2003) to propose two processing modes. An abstract processing mode "involves general, superordinate, and decontextualized mental representations that convey the essential meaning of goals, events, and actions that denote the 'why' aspects of an action including the ends that are consequential to it" (Watkins, 2011, p. 261). A concrete processing mode "involves subordinate, contextual, and specific details of goals, events, and actions that denote the feasibility, mechanics, and means of 'how' to do the action" (Watkins, 2011, p. 261). The abstract processing mode was interpreted as characteristic of depressive rumination, contributing to unconstructive outcomes, whereas the concrete processing mode was interpreted as inconsistent with rumination and contributing to constructive outcomes (Watkins, 2008).

These two processing modes can be distinguished on three overlapping dimensions: (a) orientation to the purpose or "ends" of a goal or activity (abstract) versus the process or "means" of getting there (concrete); (b) superordinate (abstract) or subordinate (concrete) goal representations; (c) contextualized and situationally specific (concrete) or decontextualized and cross-situational (abstract) information processing (Watkins, 2011). These dimensions characterize important differences between the phenomenology of flow and rumination (see also Table 2). In flow, the currently active (or prepotent) level of processing is appropriate to the task demands (i.e., supporting appropriate skill balance and feedback), which gives rise to the experience of actions flowing effortlessly and an optimal rate of perceived progress. Descriptions of flow experiences are characterized by the salience of the momentary unfolding process of the activity (Csikszentmihalyi, 1990), consistent with an orientation toward the "means" and the process of working toward one's goal. In contrast, within depressive rumination, the orientation tends to be toward the purpose of an activity or event ("why it happened," "what it means") and evaluative processing of performance relative to a desired outcome or standard (e.g., Watkins & Baracaia, 2002; the "ends," abstract). Thus, flow and rumination differ in terms of their respective orientation to process versus purpose (dimension 1).

An important antecedent to flow is having clear proximal (subordinate) goals for one's activity (Abuhamdeh, 2020). Keller et al. (2011) experimentally manipulated the demand-skill balance in a computer task and measured subsequent clustering (the use of higher-order categories to process information) during a free recall task. Participants in the flow-inducing balanced demand-skill condition used lower levels of clustering than participants in the boredom and overload conditions suggesting that inducing flow increased concrete processing (Keller et al., 2011). Depressive rumination is characterized by abstract goal construals (e.g., Rimes & Watkins, 2005; abstract processing mode). State rumination about problematic goal progress can occur at different levels of goal construal (Carver & Scheier, 1998), however, it is the failure to attain higher-order goals that tends to underlie rumination

(Martin & Tesser, 1989; McIntosh & Martin, 1992) because such abstract superordinate goals tend to be both harder to attain and harder to relinquish because they are tied into personal identity (Carver & Scheier, 1998). Thus, the antecedents of flow and rumination differ in relative level of goal construal, with flow typically defined by more concrete construal than rumination (dimension 2).

With respect to the third dimension (situationally specific vs. decontextualized processing), flow is typically conceptualized and measured with reference to specific absorption in one's current activity in the present moment (e.g., Jackson & Marsh, 1996; Peifer & Engeser, 2021). Numerous studies support a definition of flow that entails complete absorption in one's current activity and is thus situationally specific (Peifer & Engeser, 2021). In contrast, ruminative processing is characterized by decontextualized processing. The specificity of state rumination influences emotion regulation: Levels of goal-focused rumination were associated with unhelpful affective consequences only when rumination was low in specificity (i.e., abstract, Roberts et al., 2020).

Perceptual Input (Internal vs. External)

Beyond differences in goal construal, flow states and rumination also differ with respect to the source of perceptual input for goal-relevant feedback and thought valence. Flow states involve full absorption in one's current (external) activity (e.g., Abuhamdeh, 2021b; Norsworthy et al., 2021). During flow states, the perceptual signal for momentary goal progress is primarily derived from feedback from one's external activity. In contrast, during rumination the perceptual signal is derived internally (e.g., from negative affective states; Carver & Scheier, 1998; Watkins, 2008). Thus, rumination is characterized by internal self-focus, whereas flow is typically characterized by processing of one's momentary external activity.

Affective Outcomes of Flow Versus Rumination

There is substantial longitudinal and experimental evidence that depressive rumination exacerbates and prolongs pre-existing negative emotional states (e.g., sadness, anxiety, irritability; see Watkins & Roberts, 2020, for a detailed review of this evidence). In contrast, there is considerable evidence that flow states are associated with concurrent and subsequent positive affect (Barthelmäs & Keller, 2021; see Abuhamdeh, 2021b, for a discussion of enjoyment and positive affect during flow). Correlational and longitudinal studies demonstrate that flow states are antithetical to task-specific state anxiety and are associated with greater well-being, fewer mental health symptoms, lower risk of depression, and greater self-efficacy (see Norsworthy et al., 2021; Riva et al., 2016).

Supporting this, large scale longitudinal and experimental research highlights beneficial affective outcomes associated flow. For example, a large longitudinal study of 9,361 monozygotic twins used survival analyses to demonstrate that flow proneness reduces risk for subsequent depression by 16% after controlling for neuroticism and that twins who experienced more flow had lower risk for depression than their co-twin (Gaston et al., 2024). Similarly, a prospective study of 5,115 Chinese participants during the coronavirus pandemic in 2020 found that subjective experiences of flow states—but not mindfulness—mediated the association

between length of quarantine periods and subjective well-being, with high levels of flow removing the observed association between quarantine time and well-being (Sweeny et al., 2020). Additional observational and experimental studies demonstrate that flow-inducing activities reduce worry, bolster positive affect, and mitigate negative affect during periods of uncertainty (e.g., waiting for exam results, or trying to find a job; Rankin et al., 2019). Notably, Rankin and colleagues' findings indicated that, whereas participants needed support to identify and engage in flow-inducing activities, such flow states had beneficial emotion regulatory outcomes when managing periods of uncertainty.

Treatment Implications

Treatment Studies of Flow and Rumination

Building on the experimental and correlational evidence that flow and rumination have contrasting affect regulation effects, there is emerging evidence that practicing strategies designed to induce the experience of a flow state can be uniquely beneficial in the treatment and management of rumination and depression (Watkins, 2016; Watkins et al., 2023). Rumination-focused cognitive behavioral therapy (RFCBT; Watkins, 2016) is an evidence-based treatment for rumination that incorporates multiple treatment components. A core component of RFCBT focuses on the cultivation of experiences of absorption and flow. This is achieved through practicing detailed, experiential recall of memories of experiencing flow states. In addition, RFCBT uses functional analysis and activity scheduling to identify the setting conditions for flow states and to increase opportunities to experience flow in daily life. RFCBT also emphasizes the importance of developing a more concrete-experiential processing mode, whereby attention is focused on the specific contextual details of experiences, the process ("how") by which the activity unfolded, and the immediate proximal goal of the activity in the moment. There is an emphasis on identifying experiences that are autonomously motivated and have the core phenomenological characteristics of flow. Multiple clinical trials have shown that RFCBT is effective for the treatment and prevention of depression, and it produces significant reductions in rumination and repetitive negative thoughts (e.g., Hvenegaard et al., 2020, Cohen's $d = 0.38$, 95% CI [0.03–0.73] for reductions in depression relative to group CBT; Jacobs et al., 2016; Langenecker et al., 2024 mean difference in change in rumination 9.77, 95% CI [2.77–16.77], Cohen's $d = 0.71$; Topper et al., 2017 Cohen's d for measures of repetitive negative thinking 0.53–0.89, Cohen's d for reduction in symptoms of depression 0.55; Watkins, 2011 mean difference in change in depression 4.67, 95% CI [0.28–9.05], Cohen's $d = 0.94$). Importantly, Watkins et al.'s (2023) fractional factorial optimization trial investigating individual main effects and interactions of seven treatment components within RFCBT for patients with depression found that only the presence of the absorption training component had a significant main effect on symptoms of depression, relative to its absence. The absorption training component, which draws on the principles of flow (as described earlier in the text), contributed to greater symptom reduction at 6-month follow-up (difference in PHQ-9 score, -0.54 , 90% CI [-0.97 to -0.11]), providing

preliminary support for a specific causal effect of the cultivation of flow experiences on depression outcomes.

Taken together, these findings indicate that in addition to addressing content and process aspects of negative thoughts, feelings, and behavioral responses to these, a more elaborated focus on content and process aspects of cultivating the experience of being absorbed in enjoyable activities may be an important aspect of treatment approaches for rumination and depression.

Mechanisms by Which Flow Is Predicted to Reduce Susceptibility to Rumination

The literature reviewed above provides good theoretical and mechanistic reasons to hypothesize that the cultivation of flow states will act as a counterpoint to rumination. In particular, the phenomenological features and affective outcomes of ruminative and flow states are in clear opposition to one another (e.g., Table 2). Consistent with this, preliminary data indicate that absorption training that incorporates making plans to increase flow has a significant effect in reducing symptoms of depression and susceptibility to rumination (e.g., Watkins et al., 2023). However, further research is needed to robustly examine the potential effectiveness of absorption training as a standalone intervention and to evaluate the cultivation of flow states as a key mechanism of change for reducing rumination as a primary outcome (as opposed to symptoms of depression). The framework developed above predicts that flow will act as an effective emotional regulation strategy and counterpoint to rumination because it shares the common phenomenological quality of an intense and self-perpetuating attentional focus while having specific properties that are antagonistic to rumination.

There are several hypothesized mechanisms by which cultivating flow might reduce susceptibility to rumination. First, cultivation of flow state might alter attentional processing through enhancing present-moment awareness, that is, situationally specific in-the-moment external focus on one's current activity. Rumination is characterized by reduced present-moment awareness, whether mental time travel to the past or future or conceptual thinking about and comparisons about the current activity (e.g., thinking "Why is this so much harder than before?"). The cultivation of flow states is hypothesized to enhance present-moment focus and engagement, thereby directing attention away from the comparisons, evaluations and projections that can initiate rumination and potentially preventing rumination during periods of vulnerability. Future studies that directly compare absorption "flow" practice with other strategies that bolster present-moment awareness but do not aim to induce flow, such as a mindful body scan, would be a helpful first step to test this hypothesis.

Second, the cultivation of flow is hypothesized to reduce rumination through increasing engagement in activities that are enjoyable and meaningful and absorbing. This would act like a putatively enhanced variant of behavioral activation in which flow antecedents are explicitly considered such as optimizing demand-skill balance and maximizing autonomous motivation when selecting and scheduling activities. This could include enhancing orientation toward and engagement with activities that are aligned with one's values and purpose (self-concordant goals), with a view to lead to enhanced progress, felt authenticity and approach orientation (for an example of a similar self-regulatory approach to

depression, see Strauman and Eddington, 2017). Such an approach would be predicted to enhance perceived goal progress and the experience of rewarding goal-directed activity, which, in turn, reduces the propensity to procrastination and the perception of poor goal progress and nonreward that can activate rumination. Moreover, the effective increase in positive activities may also reduce rumination through bolstering positive affect and reducing negative emotions. Because negative emotions (anxiety, depressed mood) are an important cue and trigger for rumination, reducing these cues may further reduce the frequency of rumination being activated. These hypotheses could be tested by contrasting standard behavioral activation techniques (functional analysis and activity scheduling) versus the same techniques specifically targeted at identifying and providing the setting conditions for flow experiences.

Strategies to Support the Cultivation of Flow

Within absorption training, there is a focus on the setting conditions for flow (e.g., optimal demand-skill balance), which is consistent with experimental approaches to inducing flow, and can be interpreted with reference to the motivational antecedents for flow, as contrasted with rumination, that are identified in Table 3, as well as the setting conditions for flow summarized in Table 1. Absorption training uses activity scheduling, focused on activities where an individual has previously reported experiencing flow, and which afford the setting conditions for future such experiences. In addition, drawing on processing mode accounts (Watkins, 2011), individuals are guided to practice focusing on the specific contextual details of the unfolding experience, the means and process of momentary activity, and orientation toward immediate proximal goals. To our knowledge, studies have yet to test which dimensions of concreteness are most important for the cultivation of flow and whether more concrete processing arises as a natural consequence of flow or if practicing concreteness enhances the likelihood of flow experiences.

Based on this analysis, we can make a series of novel predictions. These predictions involve a more fine-grained focus on cultivating activities and experiences that directly align with each of the motivational antecedents outlined in Table 3. For example, researchers could conduct experiments that analyze the influence of manipulating goal orientation within absorption training. This would test whether guiding individuals to adopt a mastery and growth mindset when practicing flow activities enhances the effects of the training on increasing flow states and reducing rumination. We would hypothesize that directly targeting each dimension within the absorption training (as is present within the existing training for the goal construal/processing mode dimension) should augment its effectiveness and elucidate which dimensions may be most important for the cultivation of flow as a counterpoint to rumination. This would involve more directly guiding individuals to (a) identify activities and experiences that specifically correspond the relevant motivational antecedent and (b) engage in more elaborative processing of these underlying motivational dimensions to potentially augment the training. Although previous studies have examined these motivational dimensions in relation to either flow or rumination, to our knowledge, there has yet to be a systematic investigation of how

important these dimensions are to the deliberate cultivation of flow as a counterpoint to rumination.

A further intriguing possibility is the use of reappraisal to alter the motivational meaning of momentary goal strivings, with the potential to enhance opportunity for flow states (see Uusberg et al., 2019, 2023 for recent reviews of reappraisal). When one seeks to alter an emotional response to a situation using reappraisal, one can change aspects of how a situation is interpreted or alter the salient goals and reference values that are used to evaluate the situation, with the potential to enhance the salience of autonomous and approach oriented motives and increase perceived self-efficacy and expectancy of success, thus manipulating the perceived demand-skill balance. There is considerable evidence that reappraisal has beneficial consequences for mental health and well-being (Aldao et al., 2010; Gross, 2015; Uusberg et al., 2023). To our knowledge, the use of reappraisal to support the cultivation of flow states has yet to be examined and might help to explain the paradoxical observation that people report more flow experiences during work than leisure (Csikszentmihalyi & LeFevre, 1989).

Limitations and Future Directions

This preliminary analysis of flow as a counterpoint to rumination awaits evaluation and further elaboration. There is little empirical evidence that has directly examined the mechanisms by which flow may be beneficial in reducing rumination beyond the fact that it entails the experience of enjoyment and becoming absorbed in something else. Because these effects could also be true for other alternative emotion regulation strategies, such as distraction, a key future test is confirming that cultivation of flow has added benefit beyond simple distraction. A critical next step will be to test these hypotheses through carefully designed experimental studies contrasting absorption training with a viable alternative that targets each mechanism but is not expected to elicit flow. Importantly, the phenomenology of flow can be directly contrasted with another evidence-based clinical strategy for cultivating present-moment awareness: mindfulness. Although mindfulness practices typically involve cultivating an observer perspective of nonjudgmental curiosity and do not necessarily entail enjoyment or orientation to activities with a high motivational value, flow states involve an immersed perspective and a self-perpetuating experience of enjoyment and high motivational value. An interesting direction for future research is the analysis of whether a shared common factor (e.g., present-moment focus) underlies the benefits of both strategies, or whether a more fine-grained phenomenological analysis, as outlined above for flow, can advance understanding of for whom each approach may be most beneficial. In addition, further treatment studies of absorption training for high trait ruminators that measure potential mediators and moderators will be important to replicate and extend existing work to understand which aspects of the phenomenology and setting conditions of flow are most important for the reduction of rumination and prevention and treatment of depression.

Summary

We have synthesized theoretical and empirical evidence to propose that flow constitutes a phenomenological counterpoint to

rumination, with implications for the treatment and prevention of common mental health conditions such as depression. We adopted a self-regulatory framework to detail hypothesized mechanisms by which the cultivation of flow might comprise a promising emotion regulation strategy to mitigate rumination. A critical next step will be empirical research to investigate these relationships and evaluate the cultivation of flow states as a core mechanism of change within absorption training.

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Received July 22, 2025

Revision received December 17, 2025

Accepted January 22, 2026 ■