

Goal Representation and Reflection:

The Crucial Roles of How We Think About Our Goals

by

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GOAL REPRESENTATION AND REFLECTION

DISSERTATION ABSTRACT

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Doctor of Philosophy in Psychology

Title: Goal Representation and Reflection: The Crucial Roles of How We Think About Our Goals

This dissertation investigates how people perceive and reflect on their goals, with the broader aim of contributing to an understanding of how to set goals that foster a fulfilling pursuit experience. Across three studies, the central focus is on goal representation, which refers to the way individuals perceive and evaluate their goals. This dissertation aims to expand the understanding of the dynamics of goal representation, its roles in shaping goal pursuit, and its relations to the self, as well as to explore interventions that guide goal reflection in order to improve well-being during goal pursuit.

Study 1 was a three-month longitudinal study that examined relative differences in six goal representation components, namely value, external motivation, attainability, instrumentality, consensus, and measurability, and their prospective associations with goal pursuit outcomes. Components showed distinct prospective associations with effort, progress, and action crisis. Additionally, the six-component structure remained aligned across two timepoints whereas components varied in stability. This project provided empirical evidence supporting a multifaceted, dynamic model of goal representation in multiple-goal contexts.

Study 2 introduced a novel network-based approach to capture the relationships between multiple goals and multiple identities with a cross-sectional design. Participants nominated their personal goals and identities, and then rated each pairwise connection between a specific goal and a specific identity. Descriptive patterns showed that goals tend to connect to distinct subsets of identities. At the goal level, broader goal–identity integration, measured as the proportion of identities connected to a goal, was associated with higher perceived value, attainability, commitment, effort, and satisfaction with progress. At the person level, greater centralization of the goal–identity network was linked to

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higher life satisfaction. This network approach expands how the self-relevance of one's goals is conceptualized and opens new possibilities for understanding how the self shapes goal representation and pursuit.

Study 3 was an online experiment aimed at testing whether brief, single-session guided reflections could enhance momentary subjective well-being during goal pursuit. Participants were randomly assigned to an attainment-focused reflection, a value-focused reflection, or a non-goal-related control condition. Across conditions, participants reported significant reductions in ill-being immediately after reflection, suggesting that both goal-related reflection strategies can buffer against negative affect and stress in the moment. Reductions were smaller for the attainment-focused condition than for the control, and no differences were observed for positive well-being or need satisfaction. Moderation analyses indicated that the effects of each strategy varied depending on the representation of the selected goal. For example, value-focused reflection was more effective for goals high in clarity, while attainment-focused reflection was less effective for goals high in value. These findings suggest that tailoring reflection strategies based on goal representation may optimize their effects on subjective well-being.

These studies establish goal representation as a multifaceted construct, demonstrate the utility of mapping goal–identity systems, and provide initial evidence that brief, structured reflections can reduce ill-being during goal pursuit.

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I am deeply grateful for my graduate school journey. These six years have felt like being a kid in a playground, constantly chasing new ideas, discovering new tools to play with, and digging into rabbit holes that may matter to no one but me. I still cannot believe how fortunate I have been to spend this much time simply reading, thinking, exploring, learning, and having fun. This journey would not have been so fulfilling without the following people.

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CHAPTER I: OVERALL INTRODUCTION

The Importance of Understanding Goals Themselves

Goals are among the most common concepts in both everyday life and psychological research. People routinely set goals, talk about their struggles with them, and experience emotional highs and lows tied to their success or failure. The popularity of goal-tracking tools and self-help content in productivity reflects a broader cultural obsession with how to manage and achieve one's goals. This widespread attention is mirrored in psychological science. Over the past century, goals have become central to theories of motivation, affect, self-regulation, and well-being, as well as to applied domains such as health behavior, organizational psychology, and intervention science. However, the dominant focus in both theoretical and applied research tends to center on how to achieve a goal. Far less attention is paid to the goals themselves. Foundational questions, such as what kinds of goals people set and how they think about their goals, remain underexplored.

Goals are central to human behavior and well-being. They shape how individuals think, feel, and act across time. A person's goals organize attention, influence decision-making, and guide behavior toward desired outcomes (Bailey, 2019; De Ridder & De Wit, 2006; Dijksterhuis & Aarts, 2010; Krantz & Kunreuther, 2007; Schoenfeld, 2010). Goals also give meaning to success and failure, shaping how people interpret their experiences and regulate their emotions (Emmons, 2003; Griffith & Graham, 2004; Park, 2010). Goal pursuit is not a binary outcome of success versus failure. Instead, it is a dynamic psychological process, and the goals people hold influence how they experience this process. Pursuing goals that are personally meaningful and perceived as attainable is associated with greater motivation, vitality, and life satisfaction (Deci & Ryan, 2000; Sheldon & Houser-Marko, 2001). In contrast, persistent engagement with externally imposed goals lacking clear pathways can lead to distress, diminished self-efficacy, and internal conflict (Brandstätter et al., 2013; Holding et al., 2021; Koestner et al., 2008).

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Goals are also part of who we are. The goals people pursue often reflect their values, identities, and social roles (Eccles & Wigfield, 2002). Over time, important goals become integrated into the self-concept, shaping how individuals define themselves and who they aspire to become (Burkley et al., 2015). Goals also serve social functions. They signal what a person stands for, what communities they belong to, and what roles they identify with. Having shared goals is fundamental to forming and maintaining social connections. Whether in close relationships, teams, or broader communities, shared goals coordinate behavior, reinforce group identity, and create a sense of belonging (Fishbach et al., 2016; Huang et al., 2015). At the same time, social context shapes which goals feel acceptable, desirable, or expected.

In summary, the goals people pursue are central to motivation, social connection, and well-being. A deep understanding of goals themselves is essential for developing theories and interventions that help people set goals that support a more fulfilling and sustainable pursuit journey.

The Definition and Features of Goals

Despite the centrality of goals in psychological science, there is no clear and consistent definition of what constitutes a “goal.” For the purposes of this dissertation, I adopt the definition of a goal as a mental representation of an end state that a person is committed to or actively striving for (Elliot & Fryer, 2008). This definition highlights three essential components. First, a goal is a mental representation. It exists as an idea stored in memory, and it is accessible, maintained, and used to guide behavior over time. These representations often involve future-oriented images of desired outcomes, along with evaluations of various aspects of goals, such as importance, feasibility, and the rationales that motivate behavior. By definition, this dissertation includes only goals that individuals are consciously aware of. Unconscious or automatic goal processes fall outside the scope of this definition. Second, a goal involves an end state that describes a condition or outcome a person wants to move toward or

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away from. This end state can take virtually any form: it may be concrete or abstract, personally defined or socially shaped, short-term or long-term. In this dissertation, I adopt this definition to accommodate the wide variety of goals people naturally generate, with no restriction on domain, framing, or temporal scope. Third, a goal requires commitment or active striving. This criterion distinguishes goals from mere desires, passing wishes, or simple tasks that do not require sustained effort or psychological investment. To qualify as a goal in this framework, an individual must either be currently investing effort toward the end state or have formed a clear intention and commitment to do so.

As mental representations, goals are inherently idiosyncratic and subjective. Because a goal can refer to virtually any end state, it may differ from other goals in countless ways. Some differences are observable, such as the goal's content or framing, while others reflect internal beliefs and evaluations, such as perceived value and attainability. Even when two people set the same goal, such as "eat healthier," they may interpret it very differently: one may view it as an obligation, while another may find it energizing. This variability in subjective evaluation makes goals a rich psychological construct, but also one that is difficult to systematically characterize and compare. The dynamic nature of goals adds another layer of complexity. Setting a goal typically involves identifying a future-oriented end state and implicitly or explicitly setting expectations about when that state should be achieved. Once a goal is set, experiences are interpreted relative to both the starting point and the anticipated timeline. As a result, even in the absence of observable progress or behavior change, the psychological experience of the goal is never static. Perceptions of urgency, feasibility, and progress may shift simply due to the passage of time. Additionally, the mental idea of the goal itself both guides and responds to the process of striving. People may describe their goals using identical wording across time, yet the plans they make, the effort they invest, the progress they observe, and the feedback they receive all shape how they evaluate those goals. Because of these features, research that focuses only on goal content or outcomes overlooks a critical lever for supporting fulfilling goal pursuit: individuals' subjective perceptions of their goals.

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Toward a Framework of Goal Representation in Sustainable Goal Pursuit

At the heart of this dissertation is a foundational question: How can we support individuals in setting goals that lead to a fulfilling and sustainable goal pursuit journey? This is an ambitious question that will require decades of research. The studies in this dissertation begin to address this question by focusing on a critical starting point: how people mentally represent their goals. This work centers on the construct of *goal representation*, which refers to the way individuals perceive and evaluate their goals. As discussed above, it captures a key source of variance among goals and plays an essential role in shaping the experience of goal striving.

To leverage goal representation as a pathway to more fulfilling and sustainable goal pursuit, three key questions need to be addressed. First, how can we capture variance in ways people represent their goals? Because goals are highly idiosyncratic, it is essential to identify the core components along which goal representations vary and how these differences shape pursuit experiences. Second, how do relationships between goals and the self influence these representations? Goals are fundamentally subjective. Individuals evaluate their goals through the lens of their personal values, identities and past experiences. Understanding how these self concepts shape goal representation is essential for explaining individual differences in how goals are evaluated, and in turn, shape goal pursuit experiences. Third, how can we guide individuals to represent their goals in ways that improve their pursuit experience? People may not always have control over which goals they pursue, but they do have certain agency in how they think about those goals. Investigating whether and how shifts in goal representation contribute to adaptive experiences can inform the design of cognitive interventions aimed at enhancing both well-being and sustained engagement during goal pursuit.

Existing research has made important contributions to each of these areas, but critical gaps remain across theoretical, empirical, and applied domains. Theoretically, although many studies have established prospective associations between individual dimensions of goals with pursuit experiences,

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few have attempted to form a comprehensive framework that organizes these attributes into a broader conceptual structure. As a result, knowledge in this area remains fragmented, limiting both theoretical integration and measurement development. Moreover, little is known about how goal representation evolves throughout the pursuit process. Despite theoretical models that emphasize the dynamic nature of goal striving, most research assesses goal representation only once at baseline, implicitly treating it as a stable trait rather than a construct that shifts over time. Without a clear understanding of how the structure and components of goal representation change, it is difficult to determine when and how they should be measured or targeted in interventions. Empirically, two forms of oversimplification limit the understanding of goal representation in real-world contexts. First, most studies either focus on one goal from a selected domain or aggregate responses across goals, thereby overlooking the fact that individuals typically pursue multiple goals simultaneously. This approach fails to capture the within-person variation in how different goals are represented, as well as how these differences influence prioritization, effort allocation, and the overall experience of goal pursuit. Second, although many theories acknowledge that connections between goals and the self are central to how goals are represented, such as by shaping perceived value or motivation, empirical work often relies on measures that fail to reflect the complexity of self-concept. For example, individuals hold multiple identities, and any given goal may connect to these identities in distinct ways. Without directly assessing which identities are linked to a particular goal, research risks oversimplifying how that goal is embedded within a person's broader identity system. This limitation constrains the understanding of how identity shapes the representation of a goal and, in turn, how these connections influence the trajectory of goal pursuit. Finally, from an intervention standpoint, existing strategies primarily focus on increasing motivation or supporting behavior change, often overlooking the affective experience of goal pursuit. This neglects the possibility that improving how people feel in the moment may be critical for sustaining long-term engagement and well-being.

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To move toward a comprehensive understanding of the role of goal representation in shaping goal pursuit experience, several underexplored areas warrant closer attention. These include clarifying its structure and stability over time, examining how different aspects of identity influence representations across multiple goals, and exploring whether shifts in representation affect how people feel during pursuit. These directions provide a conceptual roadmap for the three projects included in this dissertation.

Overview of the Three Empirical Projects

Expanding the Understanding of Goal Representation in a Multiple-Goal Pursuit Context

My first project expands the understanding of goal representation by examining two underexplored sources of variation: relative differences across an individual's goals (goal-level variance) and changes in representation over time (temporal variance). I conducted a three-month online longitudinal study and used a multifaceted approach to examine how relative differences in six goal representation components, namely value, external motivation, attainability, instrumentality, consensus, and measurability, were prospectively associated with goal pursuit experiences. I also evaluated how the overall structure and individual components of goal representation evolve during pursuit. Findings showed that distinct components were differentially associated with outcomes such as effort, progress, and action crisis, and exhibited varying degrees of temporal stability. This project underscores the multifaceted nature of goal representation and provides empirical evidence for the alignment of its conceptual structure across two timepoints, laying the groundwork for integrated, dynamic models of goal representation in multiple-goal pursuit contexts.

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Expanding the Understanding of Goal-Identity Relations in a Multiple-Goal Multiple-Identity Context

My second project introduces a novel network-based approach to describe goal-identity systems, providing an expanded framework for understanding the multifaceted ways in which goals and identities connect. While extensive theoretical and empirical evidence underscores the importance of the relationships between goals and identities, research has primarily assessed the degree to which goals align with an individual's general sense of self, overlooking the complexity of how goals relate to an individual's multiple identities. I begin with the observation that individuals have multiple goals and identities, and propose that their relationships can be operationalized as a goal-identity network, which consists of pairs of connections between specific goals and specific identities. I conducted a cross-sectional study to evaluate whether goal-identity networks can feasibly and meaningfully quantify how individuals' multiple goals relate to their multiple identities. The findings provide initial insights into how the breadth of a goal's integration with various identities is associated with its representation, and how the overall configuration of an individual's goal-identity system relates to their well-being.

Effective Goal Reflection Strategies to Enhance Well-being

My third project aims to identify goal reflection strategies that enhance subjective well-being through an online experiment with single-session interventions. To better understand how to increase positive affect and reduce negative affect during goal pursuit, this study includes two conceptually distinct reflection strategies: an attainment-focused strategy that adapts commonly used behavioral techniques that support goal-directed action; and a value-focused strategy that encourages individuals to explore how their goals align with personal values and identities, shaping their mental representation of the goal. These two strategies differ not only in focus but also in the potential psychological pathways through which they may influence well-being. One possibility is that the attainment-focused strategy enhances well-being by supporting the need for competence, helping individuals feel more effective and

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capable in managing their goals. In contrast, the value-focused strategy may enhance well-being by supporting the need for autonomy, reinforcing a sense of volition, authenticity, and personal significance in goal pursuit. This project provides an important first step in evaluating how different goal reflection strategies influence individuals' momentary emotional experiences during goal pursuit—an outcome often overlooked in behavior change research.

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CHAPTER II: EXPANDING THE UNDERSTANDING OF GOAL REPRESENTATION IN A MULTIPLE-GOAL PURSUIT CONTEXT

Introduction

Goal Representation

“What is your goal?” is often the first question about goal pursuit. While a goal’s content is essential, it only tells part of the story. A more intriguing question highlights the personal side of goals: “What do you think about your goals?” Goal representation provides a framework for answering this question. It refers to the mental structure people use to perceive, evaluate, and make sense of their goals (Berkman & Lieberman, 2009). This framework offers a lens through which individuals articulate the unique qualities of their goals, revealing the distinct ways goals are mentally represented and differentiated.

A goal can be mentally represented along countless dimensions, for example, how important it feels, how attainable it seems or whether it aligns with personal values. These dimensions collectively constitute goal representation and are inherently subjective. Two people might pursue the same goal, such as exercising regularly, but one may perceive it as exciting and manageable, while the other sees it as burdensome and difficult. Even within the same person, different goals can vary in perceived value, feasibility, and relevance. Because goal representation reflects how a person perceives the goal itself, rather than how they strive toward it, dimensions such as effort, commitment, or urgency, while related, are treated as indicators of goal pursuit and are not considered part of goal representation in this project.

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The role of Goal Representation in Goal Pursuit

Goal representation is closely linked to how individuals behave and feel during goal pursuit, ultimately influencing their likelihood of goal attainment and well-being. Psychologists have accumulated a considerable knowledge base regarding the associations among specific dimensions of goal representation, striving behaviors, goal achievement, and well-being.

Perceived value is a foundational dimension of goal representation. Expectancy–value theory proposes that goal choice, persistence, and performance are shaped by how much a person values a goal and how likely they believe they are to attain it (Atkinson, 1964; Wigfield & Eccles, 2000). Consistent with this framework, research shows that goals perceived as more important tend to elicit stronger commitment, particularly in contexts requiring individuals to prioritize among competing demands or resist short-term temptations in favor of long-term rewards (Austin & Vancouver, 1996; Berkman et al., 2017; Iwama et al., 2021). Beyond global appraisals of importance, more specific facets of value also contribute to goal pursuit, including hedonic, instrumental, and social value. For example, the vitality or positive affect associated with a goal has been shown to predict greater goal progress (Hope et al., 2016). When resources are limited or demands are high, individuals often rely on a goal’s anticipated rewards to guide selection and prioritization (Neal et al., 2017). Additionally, individuals are more likely to persist on goals that are important to their significant others (Fitzsimons & vanDellen, 2015). Together, these value-related appraisals influence how people evaluate, prioritize, and persist in pursuing their goals.

Perceived attainability is another key aspect of goal representation. Although often discussed alongside value in expectancy–value models, attainability reflects distinct beliefs about feasibility and control. Several aspects of goal representation inform how attainable a goal is perceived to be. One relevant construct is goal difficulty, which reflects how challenging the goal appears. According to goal-

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setting theory, more difficult goals tend to elicit higher performance than easier ones, whether they are self-selected or externally assigned (Latham et al., 2002; Locke & Latham, 1990). Another factor is affordance, defined as the perceived opportunities in one's environment to act on the goal, which influences whether individuals believe sustained effort is possible (McArthur & Baron, 1983). In addition, controllability, defined as the extent to which individuals believe goal outcomes depend on their own actions, has been shown to predict motivation and adaptive goal-directed behavior (Galvin et al., 2018). In summary, these facets of attainability shape whether individuals initiate action, how much effort they invest, and whether they persist in the face of obstacles.

The reasons people pursue their goals vary widely, and these motivational drives are embedded in how goals are mentally represented. According to self-determination theory (Deci et al., 1999; Deci & Ryan, 2012), goals differ in the degree to which they are pursued for autonomous versus controlled reasons. Individuals may engage with a goal because it reflects intrinsic enjoyment, personal values, or internalized beliefs; or because of external pressure or obligation. A growing body of research shows that goals pursued for more autonomous reasons are associated with greater progress (Sheldon et al., 1999), fewer competing temptations (Milyavskaya et al., 2015), and more positive affect during pursuit (Schneider & Kwan, 2013). Self-discrepancy theory (Higgins, 1997) offers a complementary perspective by emphasizing the role of self-evaluative standards in motivation—specifically, whether individuals pursue goals to reduce the gap between their actual and ideal selves, or between their actual and ought selves. Research suggests that these discrepancies are tied to distinct emotional responses, especially when facing setbacks. When individuals perceive a gap between their actual and ideal selves, they are more likely to experience dejection-related emotions, such as disappointment, dissatisfaction, and sadness, because they feel they are falling short of their own aspirations or potential (Berking et al., 2003). In contrast, a discrepancy between the actual and ought selves tends to elicit high-arousal negative emotions, such as agitation, threat, or fear, which are often driven by the anticipation or

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presence of negative consequences for failing to meet perceived duties or social expectations (Kelly et al., 2015). These findings suggest that the perceived source of motivation can shape both the behavioral and emotional responses of goal pursuit.

Certain aspects of goal representation pertain directly to how a goal is structured or framed. One such aspect is specificity, which refers to how precisely the goal is described. Specific goals provide clearer standards for action and have been consistently associated with stronger commitment and a higher likelihood of achievement (Klein et al., 1990a; Latham et al., 2002; Wallace & Etkin, 2018). Relatedly, measurability reflects how easily progress toward the goal can be tracked. Measurable goals enhance self-monitoring, a critical component of effective self-regulation (Harkin et al., 2016; Liccione, 2009). Another structural feature is construal level, which captures the abstractness of a goal's mental representation. High-level construals frame goals in terms of desired end states or values ("be" goals), whereas low-level construals emphasize concrete actions and intermediate steps toward those ends ("do" goals). Activating high-level construals has been shown to enhance self-control by fostering a broader, more purpose-driven orientation toward pursuit (Fujita et al., 2006). Collectively, these structural features shape how people conceptualize their goals, monitor their progress, and sustain motivation over time.

Finally, people rarely perceive their goals in isolation. People typically pursue multiple goals simultaneously. Some goals may be mutually facilitative, whereas others may compete for limited time and resources, creating conflict. The strength and valence of these inter-goal relationships are important components of how a goal is represented. Research has shown that goal facilitation predicts goal progress and is associated with greater positive affect and life satisfaction (Boudreaux & Ozer, 2013; Gebhardt, 2007; Riediger & Freund, 2004). In contrast, goal conflict is linked to a range of negative outcomes, including increased stress, lower commitment, reduced performance, and diminished well-being (Kelly et al., 2015; Kung & Scholer, 2021). Just as goals are not isolated, neither are individuals.

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People often consider how others perceive their goals and how socially normative or desirable those goals appear (Little, 1983). These social appraisals form another layer of goal representation. These interpersonal dimensions may influence both motivation and self-regulation, and warrant greater attention in future research on goal pursuit.

Gap 1: Fragmentation in Goal Representation Research

The previous section reviewed the significance of individual dimensions of goal representation in shaping decision-making, behavior, and affective experiences during goal pursuit. It also highlighted that goal representation is inherently multifaceted: people evaluate and differentiate their goals along numerous conceptual dimensions. Yet despite widespread recognition that goal representation is multifaceted, this complexity has been largely overlooked in research examining goal-level factors. Rather than capturing the full range of how people think about their goals, most studies assess each goal along only one or two dimensions. This limitation stems from the fact that most goal-related research is theory-driven, with each theory focusing narrowly on a minimal subset of goal components. As a result, the literature remains fragmented. This fragmentation has contributed to gaps in both theory and empirical knowledge. Theoretically, it has prevented researchers from developing an integrated understanding of how different goal components relate to one another and collectively shape pursuit. Empirically, it has led to heterogeneity in how goal representation is operationalized and measured, making it difficult to synthesize findings across studies (Kiendl & Hennecke, 2022).

Addressing the fragmentation in goal representation research would allow researchers to build a more complete and empirically grounded understanding of how people represent their goals and to identify distinct components that differentially predict striving behaviors, affective responses, and goal pursuit outcomes. One promising way to do so is by incorporating a comprehensive range of goal representation dimensions into analysis. However, this multifaceted approach requires more than

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assessing a long list of individual dimensions. To use this approach effectively, researchers must first establish a conceptual structure that organizes these dimensions into broader components. Without such structure, it becomes impractical to include dozens of predictors in a single model, which limits both analytical power and interpretability. More importantly, the absence of structure prevents researchers from identifying underlying mechanisms that associate goal representation to goal pursuit, or from comparing findings to existing theoretical frameworks.

One theory-driven approach to establishing a multidimensional structure of goal representation involves identifying critical components from existing theoretical frameworks and prior empirical research. Several such frameworks have been proposed, but no consensus has emerged. These frameworks often define goals differently, emphasize different subsets of dimensions, and rarely specify how various components relate to one another. An alternative is to adopt a data-driven approach to uncover the underlying structure of goal representation. This method uses dimensionality-reduction techniques, such as Principal Component Analysis (PCA) or Exploratory Factor Analysis (EFA), to estimate a parsimonious structure that captures the key components along which goals vary. While this approach offers the advantage of identifying a multifaceted structure based on actual patterns in how people perceive their goals, it has been rarely used in goal research to date.

To extend our understanding of the role goal representation plays in goal pursuit, it is essential to move beyond fragmented, theory-bound approaches. A data-driven, multifaceted approach offers a powerful and underutilized tool for identifying how a diverse range of components collectively and uniquely influence goal striving, affective experiences, and outcomes.

Gap 2: Overlooking Goal-Level Variance in Multiple-Goal Pursuit

Most individuals pursue multiple goals simultaneously (Kung & Scholer, 2020). However, accounting for multiple-goal pursuit involves more than simply summing across individual goals.

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Managing multiple goals is a common challenge in self-regulation and engages dynamic psychological processes that are not applicable when goals are considered in isolation. For example, goals may compete for limited resources such as time and energy, prompting individuals to continuously evaluate and prioritize their goals (Alister et al., 2024; Schmidt & DeShon, 2007). These dynamics imply that not all goals are represented in the same way. Even within the same person, some goals are perceived as more valuable or attainable than others. Accordingly, in the context of multiple-goal pursuit, variance among goals unfolds at two levels: between persons (“individual level”) and, within people, between goals (“goal level”).

Despite the prevalence of multiple-goal pursuit, most goal research adopts an individual differences approach and overlooks variance at the goal level. Studies often either examine one focal goal from a predefined domain or aggregate individuals’ goals by averaging goal representation scores across all their goals. The latter approach treats goal-level variance as noise, ignoring the nested structure of goals within individuals. However, evidence suggests that most variance in goal appraisal, motivation, and attainment exists at the goal level rather than the individual level (Holding et al., 2017; Milyavskaya & Werner, 2018; Nurmi et al., 2009). These findings challenge the assumption that individual traits are the primary determinants of goal pursuit. Therefore, by neglecting goal-level variance, research risks drawing misleading conclusions about the mechanisms underlying goal pursuit. Traits typically associated with goal achievement at the person level may not predict the progress of a specific goal within a person. Similarly, studies that treat goal representation as a stable, person-level attribute miss the opportunity to examine how differences in representation shape the pursuit of multiple goals. Addressing this gap by accounting for goal-level variance enables researchers to explore how individuals represent their goals differently and how these differences contribute to variation in goal pursuit experiences.

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Goal-level variance can be incorporated into goal pursuit research through at least two analytical approaches. One method decomposes absolute differences in goal representation scores into between-person and within-person components. This approach allows researchers to examine how goal representation influences goal pursuit experiences both across individuals and across goals within individuals simultaneously. Alternatively, researchers can focus exclusively on within-person variance by centering each goal's score around the individual's mean. This relative approach removes between-person differences and captures how each goal is represented in relation to the person's other goals. It addresses research questions such as whether, for a given person, goals that are more valuable than their other goals are more likely to be achieved (Algina & Swaminathan, 2011). The relative approach is particularly well-suited to the context of multiple-goal pursuit, where individuals need to decide which goal to prioritize at a given moment. Decisions about where to allocate effort, attention, or time often depend on comparative evaluations, such as which goals feel more urgent, attainable or worthwhile than others (Hennecke & Freund, 2013; Vancouver et al., 2010). However, no study has systematically examined how relative differences across a multifaceted goal representation structure are prospectively associated with goal pursuit experiences over time. Addressing this gap is essential for understanding how the relative representation of goals drives variation in goal pursuit experiences across a person's multiple goals.

Gap 3: Unverified Temporal Variation in Goal Representation

Goal representation is inherently dynamic. The accessibility and evaluation of a goal can shift over time, shaped by progress, setbacks, environmental cues, and interactions with other goals (Naju Ahn et al., 2015; Scholer et al., 2024). For example, both the intensity and quality of motivation often fluctuate across the goal pursuit process. It typically begins at a high level during initiation, declining as time passes and obstacles emerge, and rising again as the goal becomes more proximal (Bonezzi et al.,

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2011). Additionally, goals initially perceived as externally motivated may come to feel increasingly internally motivated as individuals engage with them (Ryan et al., 1992). In some cases, setbacks may lead individuals to devalue their goals as a coping response to disappointment (Brandstätter & Bernecker, 2022; Brandtstädter, 1989). These variations in goal representation play a critical role in shaping pursuit outcomes. For example, during an action crisis, declines in perceived desirability and attainability further intensify the crisis and ultimately lead to goal disengagement (Ghassemi et al., 2017).

Despite empirical evidence demonstrating the dynamic nature of goal representation, most theoretical models do not specify whether particular dimensions are expected to change over the course of goal pursuit. As a result, the majority of studies assess goal representation only once, typically at the goal-setting phase, assuming the stability of goal representation across time without verification. To date, no study has systematically examined the temporal variation of goal representation as a multifaceted construct, leaving open questions about how its structure and values shift throughout the pursuit process. This lack of evidence limits our ability to identify the mechanisms through which goal representation shapes goal pursuit. Assuming stability and relying on one-time assessments may overlook the impacts of within-goal changes in goal representation on goal pursuit. Moreover, even in longitudinal studies that include multiple assessments of goal representation, it is difficult to disentangle whether observed changes are driven by the passage of time itself, time-varying factors such as proximity to deadlines, or state-level fluctuations such as changes in affect.

To address this gap, it is important to examine two distinct aspects of temporal variation in goal representation. The first aspect is the stability of its conceptual structure over time. Given that goal representation is a multifaceted construct composed of several dimensions, any meaningful interpretation of change in individual components requires that its underlying structure remains consistent across timepoints. Without this verification, it is unclear whether observed changes reflect

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shifts in component values or indicate that the construct lacks a consistent structure across time. For example, people may initially differentiate between the measurability and attainability of a goal. However, as they gain experience with it, they may begin to view the goal as more attainable in part because it is easier to measure. As a result, these two components may begin to converge and load onto the same factor over time. In such cases, untested assumptions of structural stability could lead to incorrect conclusions about changes in perceived measurability or attainability, when in fact, some of the observed change may result from shifts in how these components are conceptually organized.

Beyond structural stability, it is also critical to examine how the values of individual goal representation components change naturally over time. Even in the absence of external feedback or major events, individuals may revise how they perceive their goals simply as a function of time spent in pursuit. Tracking these changes across multiple components provides a nuanced understanding of how different facets of goal representation vary in their susceptibility to within-person change. Some components may remain relatively consistent and function more like trait-like features that describe stable qualities of a goal. Others may fluctuate more often, reflecting state-like properties that are better suited for repeated measurement and dynamic modeling. Evaluating both the structural stability and temporal variability of individual components is essential for developing a comprehensive understanding of how goal representation evolves over time and influences goal pursuit.

Although a substantial body of theoretical and empirical research has underscored the central role of goal representation in shaping striving behaviors, affective experiences, and pursuit outcomes, further research is needed to examine its multifaceted structure, capture within-person relative differences, and track how it changes over time.

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Study Aims

My first project expands the understanding of goal representation by providing preliminary evidence on its temporal stability and its prospective associations with goal pursuit experiences in the context of multiple-goal pursuit. I conducted a three-month online longitudinal study using a multifaceted approach to examine how within-person differences in goal representation among an individual's goals relate to goal pursuit experiences, and to evaluate how both the overall structure and individual components of goal representation evolve during pursuit.

To adopt a multifaceted approach, I operationalized goal representation as a multifaceted construct composed of six components: value, external motivation, attainability, instrumentality, consensus, and measurability. This structure was derived from exploratory analyses in the present sample and supported by several preliminary studies (see Appendix A and preprint). Findings from these exploratory factor analyses suggest that the six components capture distinctions in how people represent their goals and that these components are differentially related to pursuit outcomes. Detailed information regarding these components is included in the material section.

This project focuses on two often overlooked sources of variance in goal representation: goal-level variance (relative differences across an individual's goals) and temporal variance (changes in representation over time). Understanding patterns in these within-person variations can offer critical insights into the psychological processes involved in managing multiple goals and adaptations to changing circumstances. By examining both forms of variability, this study advances an ecologically valid and conceptually integrated model of how people mentally represent and pursue their goals.

Aim 1: Examining the Associations Between Goal Representation and Goal Pursuit Experience at the Goal Level. The first aim of the study was to examine the prospective associations between relative differences in goal representation at the goal level and goal pursuit experiences. I

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operationalized relative goal representation by centering each goal's component scores around the individual's mean, allowing for estimates of how deviations from a person's typical goal representations predicted pursuit outcomes for specific goals. Because goal representation is a multifaceted construct composed of related but distinct components, I hypothesized that relative differences in these components would be differentially associated with specific aspects of goal pursuit experiences. This approach offers a novel contribution by isolating within-person variation in goal representation and identifying which components uniquely predict how people engage with their goals in a multiple-goal context.

Aim 2: Examining Changes in Goal Representation at the Temporal Level. The second aim of the study was to examine how goal representation changed over a three-month period, focusing on two aspects: (1) the stability of its conceptual structure, and (2) changes in the values of its individual components.

Aim 2.1. Verifying configural invariance. Measurement invariance refers to the extent to which a construct is psychometrically equivalent across groups or timepoints (Putnick & Bornstein, 2016). As an initial step toward establishing invariance for goal representation over time, this study tested configural invariance, which assessed whether the factor structure was congruent across measurement occasions. Specifically, I compared the factorial structure of goal representation at baseline and at the three-month follow-up. I hypothesized that the multifaceted structure of goal representation would remain stable across timepoints. Establishing configural invariance was essential for interpreting observed changes in component scores and laid the groundwork for quantifying measurement variance in future studies.

Aim 2.2. Evaluating temporal changes in individual components. Prior research on the dynamic nature of goal representation had primarily examined isolated dimensions within specific contexts. In contrast, this study evaluated changes across all six components over a three-month period. Building on

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the multifaceted nature of goal representation, I hypothesized that its components would vary in the degree to which they evolve during pursuit. The findings provided preliminary evidence for distinct trajectories of individual components across timepoints, laying the groundwork for future longitudinal research on the reciprocal relationship between goal representation and goal pursuit.

Methods

Participants

I recruited 251 participants from Amazon Mechanical Turk for this online longitudinal study. It is worth noting that this study was conducted during the COVID-19 pandemic in the United States. A power analysis for correlation coefficient was conducted with .95 power to detect a medium effect size of .25 at the standard .05 alpha error probability. The results recommended a sample size of 202, and therefore we set our recruitment goal at 250 to accommodate potential attrition and missing data. I expected participants to have 3 or 4 goals on average based on data from pilot studies. Thus our targeted sample size would be sufficiently powered at the individual level and well-powered at the goal level.

To control for potential confounding influences on goal representation and goal pursuit experiences, all participants met four inclusion criteria prior to recruitment: they were over 18 years old, native English speakers, not currently diagnosed with depression, and residing in the U.S. Goal representation ratings rely heavily on nuanced language comprehension and cultural context, so limiting the sample to native English speakers helped ensure consistency in how participants interpreted the goal items. Additionally, prior research has shown that depression can affect motivation (Anderson et al., 2023), perceived goal importance (Street, 2002), and sense of purpose (Boreham & Schutte, 2023).

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Including individuals with current depression diagnoses could therefore introduce confounding variability in the associations between goal representation and goal pursuit.

Material

Personal Goals. I asked participants to list up to five goals that they anticipated either achieving or making progress on over the next three months. I set only this criterion because I wanted to ensure that participants would experience changes with these goals while still preserving their idiosyncratic nature. Given that individuals may represent and evaluate the progress of their goals differently depending on their temporal durations, I asked them to categorize each goal into the following three categories: short-term goals that they planned to complete within the next three months, long-term goals on which they planned to make progress over the next three months, and recurrent goals that they plan to maintain over the next three months.

Goal Representation. I generated a relatively comprehensive list of single-item measures of goal representation based on theoretical frameworks and previous experiments. I deliberately included as many dimensions of goals as possible, such as goal framing, goal evaluations, motivation, inter-goal relationships, and social evaluations about goals. Notably, I included only measures assessing people's perceptions of their goals and did not include items related to goal content (e.g., whether a goal was about physical activity) or striving behaviors (e.g., how often a person engaged in behaviors intended to promote the goal). For dimensions without existing single-item measures, I developed items based on their definitions. For example, I measured affordance using the item "How much does your current environment enable you to work on this goal?" based on its definition as the degree of opportunities in the environment to meet the goal (Austin & Vancouver, 1996). I evaluated and modified these items based on their distributions, inter-correlations, and qualitative feedback from participants in four previous cross-sectional studies. I finalized the goal representation measurement list with thirty-one

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items: one nominal item, two ordinal items, and twenty-eight items using a Likert scale. All items were assessed on a 7-point Likert scale, except for the attainability item, which used an 11-point Likert scale. (See Appendix B for a complete list of goal representation items.)

I operationalized goal representation as a multifaceted construct with six components, derived from a data-driven exploratory factor analysis of thirty-one items. The six components are value, external motivation, measurability, consensus, instrumentality, and attainability. I conceptualized each component based on the items that were primarily loaded onto it. The value component reflects the subjective importance people assign to their goals, including attainment value, hedonic value, alignment with personal values, and higher-level construals. The attainability component reflects the perceived likelihood of success, incorporating evaluations of goal difficulty, clarity of pursuit procedures, and environmental support. These two components align closely with the value and expectancy constructs described in expectancy–value theory (Wigfield & Eccles, 2000). In particular, the attainability component is conceptually similar to self-efficacy, as both involve judgments about one’s capability and likelihood of successful goal pursuit (Bandura, 1997). The external motive component captures the degree to which a goal is motivated by external factors. It includes items that cut across multiple motivational theories, including the motives to meet social expectations, obtain extrinsic rewards and avoid shame (Deci & Ryan, 1985; Higgins, 1987). It also includes items related to the external impacts of goals, such as their visibility and importance to other people. The consensus component reflects the degree to which a goal is perceived to be commonly held and esteemed within society. It reflects the two main factors people consider when they project their goals to society: how often others hold the goals and how valuable they perceive them to be. The measurability component reflects the extent to which a goal is clearly defined and progress toward it can be objectively evaluated. It represents the feasibility to assess advancement. The instrumentality component reflects the extent to which a goal is embedded within a broader system of pursuits. It represents the degree to which a goal is positively

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related to other goals. See Appendix A for the six components of goal representation and the individual item loadings. **Goal Striving Behaviors.** To explore the relationships between goal representation and goal pursuit experience, I included eight items related to striving behaviors assessed at baseline, including commitment, urgency, effort, initial timing of the goal, expected regret, procrastination, and experiences of failure. At each monthly follow-up, I assessed commitment, urgency, effort, resources, implementation intentions, and action crisis. All items were assessed with single-item measures on a 7-point Likert scale, except for action crisis, which was assessed with a six-item action crisis scale (Brandstätter et al., 2013). (See Appendix C for a complete list of goal striving items.)

Subjective Progress. At baseline, the assessment of subjective progress depended on the type and temporal duration of the goals to ensure face validity of the items. For short-term goals that participants planned to complete within three months, baseline progress was assessed with the item: “How much progress have you made towards this goal?” using an 11-point Likert scale ranging from 0% to 100%. For long-term goals, where progress but not completion was expected within three months, we used the same item. Participants were also asked to describe the progress or milestones they planned to achieve in the following three months in a complete sentence. Additionally, we assessed participants’ satisfaction with their progress for both short-term and long-term goals using the item: “How satisfied are you with this level of progress?” on a 7-point Likert scale. For recurring goals that participants planned to maintain for three months, progress was assessed with the item: “How often have you successfully maintained or achieved this goal? Please click on the bar where the corresponding percentage represents your success rate in achieving this goal,” using an 11-point Likert scale ranging from “Never” to “100%.” Satisfaction with the progress of recurring goals was assessed with the item: “How satisfied are you with this level of success rate?” on a 7-point Likert scale.

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In the follow-up surveys, subjective progress for both short-term and long-term goals was measured with the item: “How much progress have you made out of the total progress you hoped to make during these three months?” using a 12-point Likert scale ranging from “0%” to “Have made more progress than I planned.” Monthly progress for recurring goals was measured with the same item as at baseline: “How often have you successfully maintained or achieved this goal?” Satisfaction with progress was assessed in the same manner as at baseline.

Procedure

At baseline, after completing the screening and informed consent process, participants read through the definition of a goal along with multiple examples illustrating various framings and contents. Next, they listed up to five goals they were currently pursuing. Then, they rated each goal on all goal representation and striving items, as well as their baseline subjective progress and progress satisfaction. The order of the goals and items was randomized.

After the baseline assessment, I sent participants a follow-up survey every month for three consecutive months. The first two follow-ups were brief surveys in which participants updated their goal progress. In these surveys, participants first indicated the status of each goal as one of the following: achieved, abandoned, continued, or adjusted. They then rated each goal on its current progress, progress satisfaction, and striving behaviors over the past month. If a goal was achieved or abandoned, participants also re-rated it on all goal representation items, and I stopped tracking that goal in subsequent surveys. If a goal was adjusted, participants were required to list the newly adjusted goal and rate the new goal on all goal representation items. In the final follow-up survey, in addition to the items included in previous surveys, participants re-rated all the goals they were still actively pursuing on all goal representation items.

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Analysis Plans

Aim 1. I used multiple linear regression models to evaluate the prospective associations between relative differences in baseline goal representation components and relative differences in goal pursuit experiences across an individual's multiple goals. All variables were person-mean centered to isolate within-person, goal-level effects. The initial plan was to model all five outcomes: goal progress, progress satisfaction, commitment, effort, and action crisis. However, substantial correlations between several of these outcomes (e.g., between progress and progress satisfaction, and between commitment and effort) raised concerns about redundancy (see Supplementary Table [S1.1](#) for the full correlation matrix). Therefore, I focused on three representative outcomes: overall perceived progress at the final follow-up and average reported effort and action crisis across all follow-ups. These outcomes were selected to capture distinct aspects of goal pursuit: evaluative (progress), behavioral (effort), and psychological process (action crisis). In the full models, I included all six goal representation components as predictors and controlled for initial progress at baseline. I then used backward elimination to identify the subset of predictors significantly associated with each outcome, removing non-significant terms based on an F-test threshold of $p > .05$.

Aim 2.1. I verified configural invariance by evaluating whether the conceptual structure of goal representation aligned and whether the patterns of loadings remained consistent between the two assessment timepoints. To account for missing data and variations in study durations, I included only those goals with ratings at both baseline and the three-month follow-up. I extracted six factors using exploratory factor analysis (EFA) from the baseline and follow-up samples separately and compared the alignment of each component by verifying that the same items loaded on the same component across both time points. When the models indicated configural invariance, I quantified differences in

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component loadings by calculating the squared differences between the standardized factor loadings for congruent items.

Aim 2.2. I used linear mixed-effects models with random intercepts to evaluate changes in each goal representation component over time. To assess whether components varied in the degree of change between the two assessment timepoints, I included time (baseline = 0, follow-up = 1), goal representation component (six-level factor), and their interaction as fixed effects, with component value as the dependent variable. I also included grand-mean centered overall progress as a covariate to account for variability in goal pursuit process. A random intercept was included for participants to account for the nested structure of repeated ratings within individuals. Post-hoc comparisons were used to examine changes in each component individually.

The basic model is specified as:

$$\text{ComponentValue}_{ij} = \beta_0 + \beta_1 \text{Time}_{ij} + \beta_2 \text{Component}_{ij} + \beta_3 (\text{Time} \times \text{Component})_{ij} + \beta_4 \text{Progress}_{ij} + u_{0j} + \varepsilon_{ij}$$

To explore whether changes in goal representation components varied by goal type, I conducted follow-up models testing the interaction between time and goal type (short-term, long-term, and recurring goals) only for the component that showed a significant change over time based on post-hoc comparisons. This allowed me to evaluate whether the extent of change differed depending on the temporal scope of the goal. Each model included time, goal type, and their interaction as fixed effects, with the component score as the dependent variable and overall progress as a covariate. A random intercept was included for participants. Post-hoc comparisons were used to examine changes within each goal type individually.

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Results

Sample Overview

Baseline. After excluding five participants due to poor data quality (e.g., short durations, uniform responses, attention check failures, or missing data), the final sample included 246 mTurk participants (51.2% women; $M_{\text{age}} = 43.51$, $SD_{\text{age}} = 13.12$), with 75.87% identifying as White. Participants listed an average of 3.81 goals ($SD = 1.08$; mode = 5), yielding 845 goals at baseline.

Retention. Of the 246 participants, 89.02% completed at least one follow-up, and 78.05% completed all three. At the goal level, 706 goals (83.55%) were completed, abandoned, or last updated by the third follow-up and retained for analysis.

Aim 1 Sample Overview. Because Aim 1 focused on within-person variability in goal pursuit, participants who listed only one goal were excluded. The analytic sample for Aim 1 included 836 goals from 237 participants. Of these, 704 goals from 213 participants had valid overall progress ratings recorded at follow-up.

Aim 2 Sample Overview. The second aim examined the temporal stability of goal representation as a multifaceted construct. To reduce heterogeneity in time intervals between assessments, goals that were completed, abandoned, or adjusted before the third follow-up were excluded. The final analytic sample for Aim 2 included 486 goals from 194 participants.

Associations Between Goal Representation and Goal Pursuit Experience at the Goal Level.

Descriptive Stats. Descriptive statistics for the six goal representation components are presented in Table 1. These variables represent unit-weighted component scores derived from an exploratory factor analysis (EFA) using oblique rotation. On average, participants rated their goals as moderately attainable ($M = 3.38$, $SD = 1.04$), moderately externally motivated ($M = 3.47$, $SD = 1.26$), and

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somewhat consistent with social consensus ($M = 3.19$, $SD = 1.20$). Goals were rated high in personal value ($M = 5.55$, $SD = 0.95$), instrumentality ($M = 5.05$, $SD = 1.23$), and measurability ($M = 6.07$, $SD = 1.14$). Most component score distributions approximated normality, with the exception of Value and Measurability, which were negatively skewed. Measurability exhibited particularly strong skew, with over 50% of goals rated above 6 on a 7-point scale (see distribution in Figure 1). Intraclass correlation coefficients (ICCs) ranged from 0.17 to 0.40, indicating that the majority of variance in these components was attributable to differences between goals within individuals.

Descriptive statistics for all goal pursuit measures included in the analysis are presented in Table 2. On average, participants reported low levels of baseline progress ($M = 3.41$, $SD = 2.82$) and moderate levels of overall progress at the three-month follow-up ($M = 6.30$, $SD = 3.47$). The distribution of baseline progress was positively skewed, suggesting that participants were just beginning to pursue many of their goals at the start of the study. In contrast, overall progress was more evenly distributed, indicating substantial variability in how much progress participants made across different goals over the three-month period. On average across all follow-ups, effort was moderately high ($M = 4.52$, $SD = 1.66$), while action crisis was low ($M = 2.44$, $SD = 0.88$), indicating that most goals were pursued with consistent effort and little internal conflict. Intraclass correlation coefficients (ICCs) for all measures ranged from .16 to .25, indicating that the majority of variance in these measures was attributable to differences between goals within individuals.

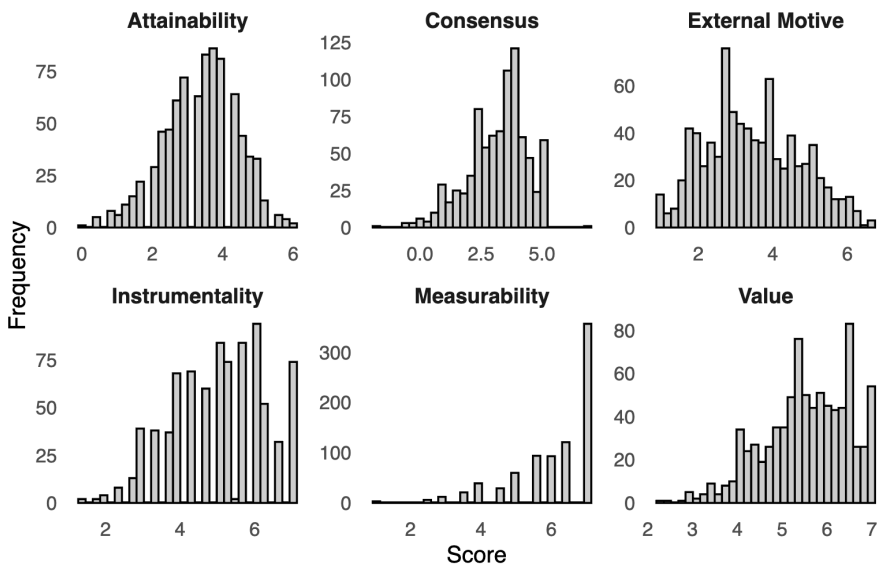
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Table 1: Descriptive Statistics for Goal Representation Component

Goal Representation Component	M	SD	n	Min	Max	ICC
Attainability	3.38	1.04	836.00	0.00	6.00	0.29
Consensus	3.19	1.20	836.00	-1.67	7.00	0.17
External Motive	3.47	1.26	836.00	1.00	6.67	0.36
Instrumentality	5.05	1.23	836.00	1.33	7.00	0.39
Measurability	6.07	1.14	836.00	1.00	7.00	0.25
Value	5.55	0.95	836.00	2.29	7.00	0.40

Note. All component scores are unit-weighted based on exploratory factor analysis. The *Consensus* and *Attainability* components each include one item with a negative loading, which was reverse-scored prior to aggregation.

Figure 1: Distribution of Goal Representation Component

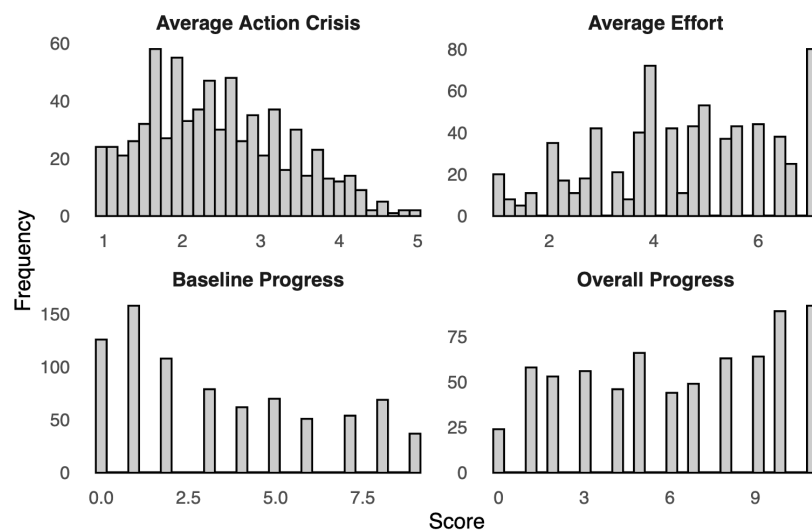


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Table 2: Descriptive Statistics for Goal Pursuit Measures

Goal Pursuit Measure	M	SD	n	Min	Max	ICC
Average Action Crisis	2.44	0.88	836.00	1.00	5.00	0.16
Average Effort	4.52	1.66	836.00	1.00	7.00	0.20
Baseline Progress	3.41	2.82	836.00	0.00	9.00	0.25
Overall Progress	6.30	3.47	836.00	0.00	11.00	0.22

Figure 2: Distribution of Goal Pursuit Measures



Overall Perceived Progress. A multiple linear regression model was conducted to examine goal-level predictors of overall progress. All predictors and the outcome were person-mean centered to isolate within-person variance and capture how relative differences in goal representation predicted differences in perceived progress across an individual's goals. The final model retained three goal representation components following backward elimination: *External Motivation*, *Attainability*, and *Instrumentality*, with baseline progress as the covariate ($R^2 = .16$, 90% CI [0.12, 0.20]; adjusted $R^2 = .15$). Goals perceived as more externally motivated ($\beta = 0.38$, 95% CI [0.17, 0.59], $p < .001$) and more

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attainable ($\beta = 0.72$, 95% CI [0.47, 0.97], $p < .001$) were associated with greater overall progress. In contrast, goals rated higher in instrumentality were associated with lower progress ($\beta = -0.47$, 95% CI [-0.69, -0.25], $p < .001$). These findings suggest that relative differences in perceived attainability, external motivation, and instrumentality account for goal-level variance in reported progress across an individual's goals. See Table 3 for full model results.

Average Effort. A multiple linear regression model was conducted to examine goal-level predictors of the average reported effort across all follow-ups. All predictors and the outcome were person-mean centered. The final model retained four goal representation components following backward elimination: *Value*, *External Motivation*, *Measurability*, and *Instrumentality*, with baseline progress as a covariate ($R^2 = .16$, 90% CI [0.11, 0.20]; adjusted $R^2 = .15$). Greater effort was associated with higher perceived goal value ($\beta = 0.46$, 95% CI [0.31, 0.60], $p < .001$), external motivation ($\beta = 0.15$, 95% CI [0.04, 0.25], $p = .006$), and measurability ($\beta = 0.15$, 95% CI [0.05, 0.25], $p = .003$). In contrast, higher instrumentality was associated with lower effort ($\beta = -0.25$, 95% CI [-0.35, -0.14], $p < .001$). These findings suggest that relative differences in perceived value, external motivation, perceived measurability and instrumentality of goals account for goal-level variance in self-reported effort across three months. See Table 4 for full model results.

Average Action Crisis. A multiple linear regression model was conducted to examine goal-level predictors of average action crisis scores across all follow-ups. All predictors and the outcome were person-mean centered. The final model retained two goal representation components following backward elimination: *Attainability* and *Instrumentality*, with baseline progress as a covariate ($R^2 = .12$, 90% CI [0.08, 0.16]; adjusted $R^2 = .11$). Higher perceived attainability was associated with lower action crisis ($\beta = -0.22$, 95% CI [-0.29, -0.16], $p < .001$), while higher instrumentality was associated with greater action crisis ($\beta = 0.07$, 95% CI [0.02, 0.13], $p = .009$). These findings suggest that relative differences in perceived attainability and instrumentality account for goal-level variance in the internal

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conflict individuals experience when deciding whether to disengage from or continue pursuing their goals. See Table 5 for full model results.

Table 3: Comparison of Full and Final Linear Models Predicting Overall Perceived Progress

	Full Model		Final Model	
	β	CI	β	CI
Predictor				
Intercept	0.01	[-0.16, 0.18]	0.01	[-0.16, 0.19]
Value	0.31	[0.00, 0.61]		
External Motive	0.33**	[0.10, 0.56]	0.38***	[0.17, 0.59]
Attainability	0.69***	[0.44, 0.95]	0.72***	[0.47, 0.97]
Consensus	-0.04	[-0.25, 0.17]		
Measurability	0.18	[-0.03, 0.39]		
Instrumentality	-0.53***	[-0.76, -0.30]	-0.47***	[-0.69, -0.25]
Baseline Progress	0.31***	[0.22, 0.40]	0.32***	[0.23, 0.41]
Model Fit				
R ²	0.17	[0.12, 0.20]	0.16	[0.12, 0.20]
R ² adjusted	0.16		0.15	
Observations	704		704	

Note. All predictors were person-mean centered prior to analysis. Goal progress refers to the person-mean centered progress reported at the three-month follow-up. The full model includes all six goal representation components. The final model retains only predictors that significantly contributed to predicting goal progress based on backward elimination. * $p < .05$, ** $p < .005$, *** $p < .001$.

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Table 4: Comparison of Full and Final Linear Models Predicting Average Effort

	Full Model		Final Model	
	β	CI	β	CI
Predictor				
Intercept	0.01	[-0.08, 0.09]	0.00	[-0.08, 0.09]
Value	0.46***	[0.32, 0.61]	0.46***	[0.31, 0.60]
External Motive	0.15*	[0.04, 0.26]	0.15*	[0.04, 0.25]
Attainability	0.12*	[0.00, 0.24]		
Consensus	0.03	[-0.07, 0.13]		
Measurability	0.14*	[0.03, 0.24]	0.15**	[0.05, 0.25]
Instrumentality	-0.26***	[-0.37, -0.15]	-0.25***	[-0.35, -0.14]
Baseline Progress	0.14***	[0.10, 0.19]	0.16***	[0.12, 0.20]
Model Fit				
R ²	0.16	[0.12, 0.20]	0.16	[0.11, 0.20]
R ² adjusted	0.16		0.15	
Observations	704		704	

Note. All predictors were person-mean centered prior to analysis. Average effort refers to the mean of reported effort across all follow-up assessments. The full model includes all six goal representation components. The final model retains only predictors that significantly contributed to predicting goal progress based on backward elimination. * $p < .05$, ** $p < .005$, *** $p < .001$.

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Table 5: Comparison of Full and Final Linear Models Predicting Average Action Crisis

	Full Model		Final Model	
	β	CI	β	CI
Predictor				
Intercept	0.00	[-0.05, 0.04]	0.00	[-0.05, 0.04]
Value	-0.04	[-0.12, 0.05]		
External Motive	-0.03	[-0.09, 0.04]		
Attainability	-0.22***	[-0.29, -0.15]	-0.22***	[-0.29, -0.16]
Consensus	0.03	[-0.03, 0.08]		
Measurability	-0.02	[-0.08, 0.04]		
Instrumentality	0.08*	[0.01, 0.14]	0.07*	[0.02, 0.13]
Baseline Progress	-0.06***	[-0.08, -0.03]	-0.06***	[-0.08, -0.04]
Model Fit				
R ²	0.12	[0.08, 0.15]	0.12	[0.08, 0.16]
R ² adjusted	0.11		0.11	
Observations	704		704	

Note. All predictors were person-mean centered prior to analysis. Average action crisis refers to the mean of reported action crisis across all follow-up assessments. The full model includes all six goal representation components. The final model retains only predictors that significantly contributed to predicting goal progress based on backward elimination. * $p < .05$, ** $p < .005$, *** $p < .001$.

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Configural Invariance of Goal Representation Components Across Three Month

To assess whether the structure of goal representation remained stable over time, exploratory factor analyses were conducted separately at baseline and at the three-month follow-up using the minimum residual extraction method with oblique rotation. In both timepoints, a six-factor solution was extracted, and the resulting factor structures showed a similar pattern of item loadings. Across baseline and follow-up, the six components, namely value, external motivation, attainability, measurability, instrumentality, and consensus, were defined by similar sets of items, indicating that each component captured a comparable construct over time.

The primary loadings for most items were consistent across time points. Five of the 26 items did not load onto the same components at both assessments. These items were external importance, conflict, visibility, clarity, and perceived control. However, these inconsistencies did not substantially alter the conceptual meaning of the components. Among the items that loaded onto the same components across time, the average squared difference in standardized loadings was 0.008, with none exceeding 0.05. These findings suggest that the factor structure remained relatively stable at the item level over time. See Table 6 for a comparison of primary component loadings at baseline and follow-up, including congruence indicators and differences in standardized loadings for each item.

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Figure 3: Exploratory Factor Analysis Results of Goal Representation at Baseline

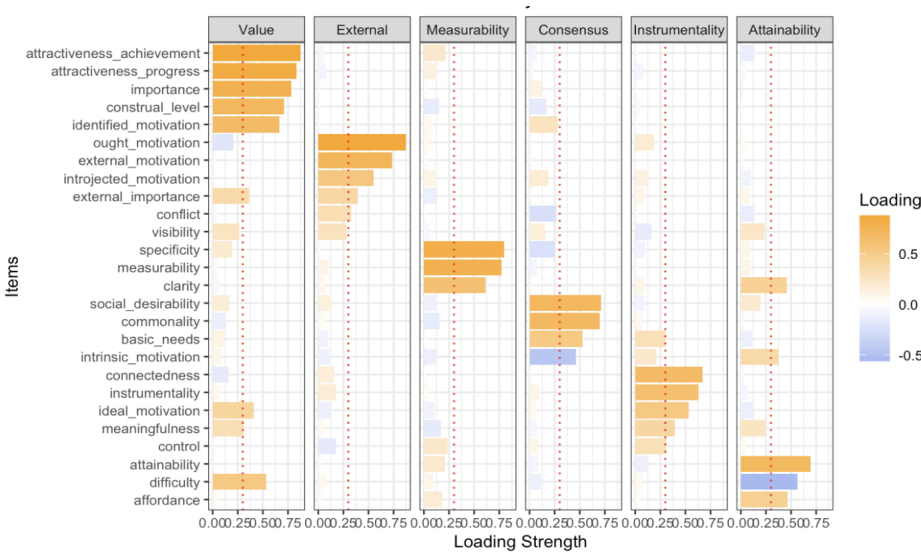
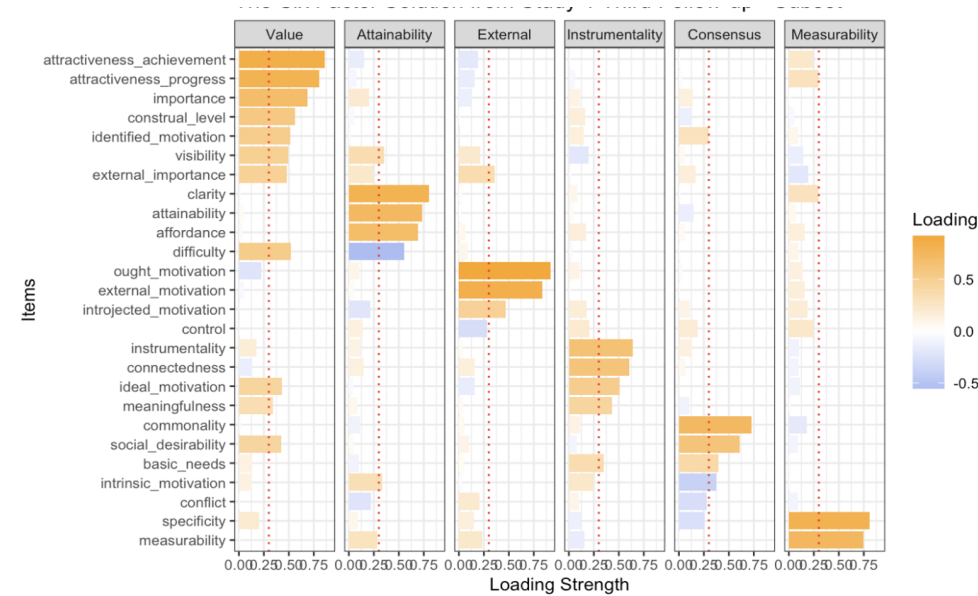


Figure 4: Exploratory Factor Analysis Results of Goal Representation at the Three-Month Follow-up



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Table 6: Exploratory Factor Analysis Results Assessing Configural Invariance

Item	Baseline		Three Month Follow-up		Congruence	PL Difference
	PC	PL	PC	PL		
Achievement Attractiveness	Value	0.88	Value	0.86	TRUE	0
Progress Attractiveness	Value	0.84	Value	0.81	TRUE	0.001
Importance	Value	0.78	Value	0.69	TRUE	0.009
Construal Level	Value	0.71	Value	0.56	TRUE	0.022
Identified Motivation	Value	0.67	Value	0.51	TRUE	0.024
Ought Motivation	External	0.87	External	0.92	TRUE	0.002
External Motivation	External	0.73	External	0.84	TRUE	0.011
Introjected Motivation	External	0.55	External	0.47	TRUE	0.007
External Importance	External	0.39	Value	0.48	FALSE	
Conflict	External	0.33	Consensus	-0.28	FALSE	
Visibility	External	0.28	Value	0.49	FALSE	
Specificity	Measurability	0.80	Measurability	0.81	TRUE	0
Measurability	Measurability	0.77	Measurability	0.74	TRUE	0.001
Clarity	Measurability	0.62	Attainability	0.80	FALSE	
Social Desirability	Consensus	0.71	Consensus	0.61	TRUE	0.011
Commonality	Consensus	0.70	Consensus	0.72	TRUE	0.001
Basic Needs	Consensus	0.53	Consensus	0.40	TRUE	0.018
Intrinsic Motivation	Consensus	-0.46	Consensus	-0.38	TRUE	0.007
Connectedness	Instrumentality	0.67	Instrumentality	0.60	TRUE	0.005
Instrumentality	Instrumentality	0.63	Instrumentality	0.64	TRUE	0
Ideal Motivation	Instrumentality	0.54	Instrumentality	0.51	TRUE	0.001
Meaningfulness	Instrumentality	0.40	Instrumentality	0.43	TRUE	0.001
Controllability	Instrumentality	0.31	External	-0.28	FALSE	
Attainability	Attainability	0.70	Attainability	0.73	TRUE	0.001
Difficulty	Attainability	-0.56	Attainability	-0.55	TRUE	0
Affordance	Attainability	0.46	Attainability	0.69	TRUE	0.052

Note. 'PC' represents Primary Component; 'PL' represents Primary Loadings; 'Congruence' represents whether the item loaded onto the same primary component at both baseline and three-month follow-up; 'PL Difference' refers to the squared difference between the standardized primary loadings at the two time points.

Temporal Changes in Goal Representation Components.

A linear mixed-effects model was conducted to examine whether the six goal representation components differed in their degree of change from baseline to the three-month follow-up. The model included time (0 = baseline, 1 = follow-up), component (six-level factor), their interaction, and overall

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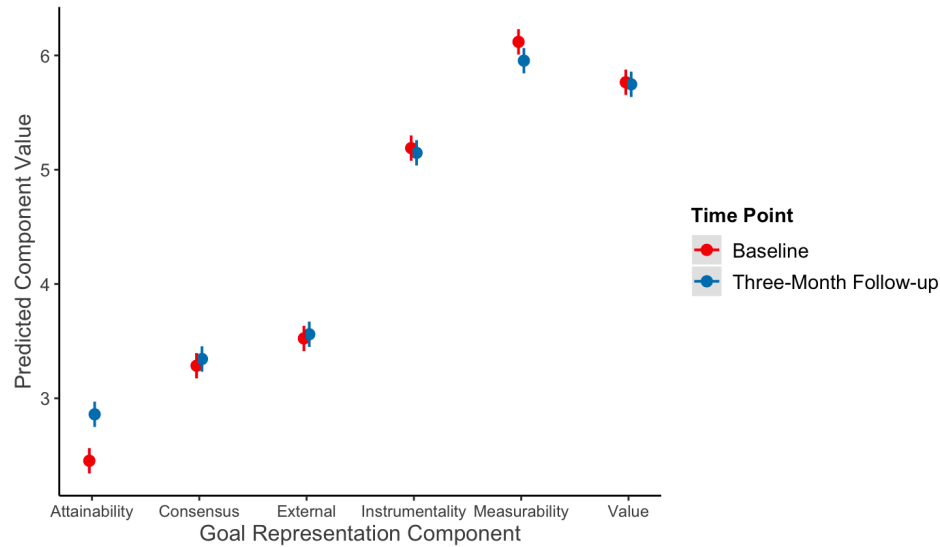
goal progress as a covariate. All predictors were entered as fixed effects, and a random intercept was included for participants. The time $\times$ component interaction was significant, indicating that the extent of change between timepoints differed across components (conditional $R^2 = .64$). See [Figure 2](#) and Table S1.2 in supplement for the full model.

Post-hoc pairwise comparisons revealed that only the attainability component significantly increased from baseline to follow-up ($\Delta M = 0.41$, 95% CI [0.28, 0.54], $z = 6.17$, $p < .001$). Changes in the measurability component did not remain significant after adjusting for multiple comparisons ($\Delta M = -0.16$, 95% CI [-0.29, 0.04], $z = -2.50$, $p = .053$), and no significant differences were observed for the other components ($ps > .05$). These results suggest that perceived *attainability* shifted over the course of three months of goal pursuit, even after controlling for overall perceived progress, whereas the other components remained relatively stable (see Table 7 for post-hoc contrasts).

To examine whether changes in perceived attainability varied by goal type, a linear mixed-effects model was conducted with time (baseline vs. three-month follow-up), goal type (short-term, long-term, and recurring), their interaction, and overall progress as a covariate. There was no significant interaction between goal type and time ($ps > .05$), indicating that the pattern of change in attainability did not differ significantly across goal types. Attainability increased from baseline to follow-up for short-term goals ($\Delta M = 0.26$, $SE = 0.13$, $p = .045$), long-term goals ($\Delta M = 0.49$, $SE = 0.12$, $p < .001$), and recurring goals ($\Delta M = 0.43$, $SE = 0.09$, $p < .001$). These findings suggest that, regardless of goal type or level of overall progress, individuals tended to perceive their goals as more attainable after three months of goal pursuit (see Table 8 for full model and Table 9 for post-hoc contrasts).

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Figure 5: Predicted goal representation component scores at baseline and three-month follow-up



Notes: Predicted component scores are adjusted for overall goal progress and reflect within-person changes over time. Error bars represent 95% confidence intervals around predicted marginal means.

Table 7: Post-hoc Pairwise Contrasts of Goal Representation Components from Baseline to Three-Month Follow-Up

Component	contrast	ΔM	95% CI	z	p
Attainability	Three-Month - Baseline	0.41	[0.28, 0.54]	6.17	< .001
Consensus	Three-Month - Baseline	0.06	[-0.07, 0.19]	0.89	.372
External Motive	Three-Month - Baseline	0.04	[-0.09, 0.17]	0.55	.580
Instrumentality	Three-Month - Baseline	-0.04	[-0.17, 0.09]	-0.63	.528
Measurability	Three-Month - Baseline	-0.16	[-0.29, 0.04]	-2.50	.053
Value	Three-Month - Baseline	-0.02	[-0.15, 0.11]	-0.27	.785

Notes: ΔM = mean difference; CI = 95% confidence interval; z = z-statistic from the linear mixed-effects model. p -values were adjusted for multiple comparisons using Tukey's method.

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Table 8: Multilevel Model Predicting Perceived Attainability from the Interaction between Goal Type and Time

	β	CI
Fixed Effects		
Intercept	1.09***	[0.83, 1.35]
Goal Type: Long-Term	-0.36*	[-0.63, -0.09]
Goal Type: Recurrent	-0.08	[-0.33, 0.17]
Time (Three-Month vs. Baseline)	0.26*	[0.01, 0.52]
Overall Progress	0.23***	[0.21, 0.26]
Time $\times$ Long-Term Goal	0.23	[-0.12, 0.58]
Time $\times$ Recurrent Goal	0.17	[-0.14, 0.49]
Random Effects & Model Stats		
σ^2	1.01	
τ_{00}	0.32	
ICC	0.24	
R^2_{Marginal}	0.31	
$R^2_{\text{Conditional}}$	0.48	
Observation (N)	972	
Group (N)	194	
Model Fit		
AIC	2984.32	
BIC	3028.23	
RMSE	0.94	

Notes: The model included fixed effects for goal type (reference = short-term), time (0 = baseline, 1 = three-month follow-up), their interaction, and overall progress as a covariate. * indicates $p < .05$. ** indicates $p < .005$. *** indicates $p < .001$.

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Table 9: Post-hoc Pairwise Contrasts of Goal Representation Components from Baseline to Three-Month Follow-Up

Goal Type	Contrast	ΔM	95% CI	t	df	p
Short-term	Three-Month - Baseline	-0.26	[-0.52, -0.01]	-2.01	779.45	.045
Long-term	Three-Month - Baseline	-0.49	[-0.73, -0.25]	-4.07	779.45	< .001
Recurrence	Three-Month - Baseline	-0.43	[-0.62, -0.25]	-4.57	779.45	< .001

Notes: ΔM = mean difference; CI = 95% confidence interval; z = z-statistic from the linear mixed-effects model. p -values were adjusted for multiple comparisons using Tukey's method.

Discussion

This project examined within-person, goal-level variation in goal representation and its prospective associations with goal pursuit experiences over a three-month period, as well as the structural invariance of goal representation and changes in individual component scores from baseline to the final follow-up. Consistent with hypotheses, relative differences in several baseline goal representation components were differentially associated with distinct goal pursuit outcomes, suggesting that how people mentally differentiate among their own goals is relevant to subsequent goal pursuit experience. Configural invariance analyses indicated that, consistent with my hypothesis, the six-component structure of goal representation remained stable over time, with most items loading consistently across timepoints. Additionally, components of goal representation differed in how they evolved during goal pursuit: only perceived attainability showed a significant increase over time.

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The Associations Between Goal Representation and Goal Pursuit Experience at the Goal Level

Findings from multiple linear regression models supported the hypothesis that components of goal representation were differentially associated with goal pursuit outcomes. Individuals exerted more effort on their goals that were higher in value, external motivation, and measurability relative to their other goals, but lower in instrumentality. They made more progress on goals they perceived as more attainable, more externally motivated, and less instrumental than their other goals. Finally, they experienced greater internal conflict when pursuing goals that were lower in attainability and higher in instrumentality compared to their own other goals. These findings suggest that how a specific goal is mentally represented, relative to an individual's other goals, is associated with subsequent goal pursuit experiences.

The present project provides empirical support for conceptualizing goal representation as a multifaceted construct. Rather than exerting uniform influence, different components were uniquely associated with distinct aspects of goal pursuit. For instance, perceived value was associated with greater effort, whereas perceived attainability was associated with reduced action crisis. Therefore, to fully understand how goal representations relate to the various psychological processes involved in pursuit, research must adopt a multifaceted approach that incorporates a broad set of components rather than focusing narrowly on one or two dimensions. Moreover, multiple components were associated with each goal pursuit outcome. For example, external motivation, measurability, and instrumentality accounted for additional variance in effort above and beyond the effect of perceived value. This pattern reinforces that goal representation is not a unidimensional construct and cannot be captured by a single overall appraisal, such as value. Instead, different components appear to operate through partially independent pathways. Accordingly, a multifaceted approach not only improves

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predictive accuracy but also enables researchers to identify distinct psychological processes through which goal representation shapes goal pursuit experiences.

This project also demonstrates the predictive utility of relative goal representation. By centering goal representation component scores within-person, the analyses exclusively focus on goal-level variance and show that relative differences in perceived value, attainability, instrumentality, external motivation and measurability were each associated with at least one aspect of goal pursuit experience. These findings align with value-based decision-making models, which emphasize the role of relative utility in guiding choices and resource allocation (Quiggin, 2012; Zhang, 2015). While most existing research focuses on between-person differences or absolute appraisals of individual goals, the present findings underscore the importance of capturing intra-individual comparisons, especially in contexts where people must coordinate their striving behaviors across multiple goals. Although relative representations do not provide the full picture and should be interpreted alongside models using absolute scores, they offer important insights into how individuals navigate multiple goal pursuits.

In addition, the present study surfaces theoretical gaps by examining a wide range of goal representation components simultaneously. By adopting a data-driven, multifaceted approach, it offers a more empirically grounded operationalization of individual components and draws attention to those that may be overlooked or underdeveloped in existing theories. One such example is external motivation. While the field has long emphasized the benefits of autonomous motivation, this project offers new insights by using a broader operationalization of external motivation and by examining relative differences at the goal level within individuals. The observed positive association between external motivation and perceived progress challenges predictions from self-determination theory, which conceptualizes external motivation as mutually exclusive with autonomous motivation and less supportive of sustained goal pursuit (Deci & Ryan, 2000). In contrast, the data-driven approach used here allows for the possibility that goals pursued for external reasons may also hold personal

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significance. Additionally, the tendency to exert more effort on relatively more externally motivated goals suggests that external motives may guide prioritization when individuals face competing demands. This aligns with research showing that under resource constraints, people often pursue goals with high instrumental or social utility, regardless of whether they are autonomously motivated (Ballard et al., 2018). More broadly, this example illustrates how examining goal representations with a multifaceted, data driven approach can refine existing theories and suggest additional psychological mechanisms underlying the role of goal representation in goal pursuit.

In summary, by examining associations between goal representation components and pursuit experiences at the goal level, this project demonstrates the predictive utility of relative goal representation and highlights the importance of a multifaceted approach to understanding how individuals mentally represent their goals in a multiple-goal context.

Stability and Change in Goal Representation during Goal Pursuit

The second aim of the present study was to evaluate temporal changes in goal representation. Consistent with my hypothesis, the six-component multifaceted structure of goal representation remained stable over a three-month period, although five items were misaligned with their original primary factors at follow-up. Furthermore, the six components differed in their susceptibility to change: after controlling for goal progress, only the attainability component demonstrated a significant change in its mean levels across the three-month interval.

Verifying configural invariance provides initial support for the assumption that the underlying structure of goal representation remains stable across the goal pursuit process. This is theoretically significant because any repeated measurement of a multifaceted construct implicitly assumes that the same components are measured by the same set of items across time and occasions. By confirming that the same set of components emerged at both time points, the present findings suggest that individuals

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continue to differentiate among key aspects of their goals, even as circumstances and experiences evolve. Establishing configural invariance also indicates that any observed differences in individual component scores over time are unlikely to reflect changes in the underlying structure of goal representation, thereby providing a critical foundation for interpreting temporal changes in specific components. Additionally, only after configural invariance is established can researchers proceed to test more stringent forms of measurement invariance, such as metric invariance (equality of factor loadings) and scalar invariance (equality of item intercepts) (Widaman et al., 2010). These additional levels of invariance are necessary to distinguish true psychological change from variance due to shifts in measurement properties and to ensure the comparability of latent factor scores across time.

In interpreting the results of the configural invariance analysis, it is important to note that we did not rely on a predefined structural equation modeling (SEM) framework, given the absence of prior models specifying the latent structure of goal representation. Instead, the evaluation was exploratory and qualitative, focusing on whether the same overall six-factor structure emerged and whether each component continued to represent similar aspects of goal representation over time. This approach emphasizes the consistency of the overall conceptual organization rather than strict adherence to model fit criteria (Osborne & Fitzpatrick, 2012). Consequently, the fact that a few items did not load onto the same factors across time does not undermine the interpretation of configural invariance. Items such as conflict, visibility, and control had weak primary loadings at baseline and contributed minimally to the interpretation of their respective components. Two items with moderate loadings, external importance and clarity, also shifted in their primary factor associations. These changes may reflect underlying changes in how individuals represent their goals. For example, external importance may have become more integrated with personal values, and clarity may have become more closely tied to attainability as individuals made progress. However, these shifts involved only two of twenty-six items and did not alter

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the overall factor structure. Thus, they do not compromise the conclusion that goal representation demonstrated configural invariance across the three-month period.

Following the initial verification of the six-component structure of goal representation, the present project found that individuals perceived their goals as more attainable after three months, regardless of how much progress they had made. In contrast, ratings on the other components remained relatively stable over the same period.

The observed increase in perceived attainability, even after controlling for overall progress, suggests that attainability is a dynamic component of goal representation that evolves alongside individuals' experiences during goal pursuit. Existing progress is undoubtedly a major influence on how attainable a goal feels; people generally perceive goals as more achievable as they accumulate success (Campbell & Warren, 2015; Pomaki et al., 2009). However, the fact that attainability still increased after accounting for progress indicates that it is not merely a retrospective summary of outcomes. Instead, this finding suggests that attainability reflects a distinct cognitive appraisal shaped by unfolding experiences during striving. Although no existing framework comprehensively models how individuals evaluate attainability, empirical research indicates that attainability may be influenced by affective cues, feedback, unexpected ease or difficulty, changes in strategy, or fluctuations in perceived effort (Drèze & Nunes, 2011; Ghassemi et al., 2017; Rafieian & Sharif, 2023; Weingarten et al., 2019). Additionally, being a dynamic component means that perceived attainability may increase or decrease during goal pursuit. The overall increase observed in this study should not be interpreted as a universal pattern. The present analysis included only goals that were still active at the final follow-up in order to ensure consistent temporal duration. Goals that became less attainable earlier in the process may have been abandoned and were therefore excluded. This introduces a selection bias, whereby the final sample overrepresents goals that remained active and increasingly attainable, while underrepresenting those that failed or

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were disengaged. Overall, the findings underscore that individuals tend to update their perception of how attainable their goals are as they actively engage in goal pursuit.

In contrast to the shift observed in perceived attainability, the other five components of goal representation, value, instrumentality, measurability, external motivation, and consensus, did not demonstrate significant changes over the three-month period. This pattern suggests that these components reflect aspects of goal representation that are relatively stable across goal pursuit. For some components, such stability is conceptually grounded. Perceived consensus may reflect relatively stable beliefs about social norms or others' approval (Bossert et al., 2025; Kalkstein et al., 2023; Sivertsen, 1957). Similarly, measurability likely depends on the content of the goal, which are typically determined at the beginning for the goal pursuit process and remain unchanged (Klein et al., 1990b). For other components, such as value, instrumentality, and external motivation, the observed stability may be qualified by the context of the present study. These components appeared relatively stable over the three-month pursuit period, suggesting that individuals' initial appraisals may remain intact in the absence of substantial goal revision, disengagement, or contextual disruption. This short-term consistency aligns with prior research indicating that core values shift gradually over the course of years (Bühler et al., 2019) and that individuals tend to experience goals as intrinsically or externally motivated depending on their content, such as whether the goal reflects intrinsic aspirations (e.g., personal growth, meaningful relationships) or extrinsic aspirations (e.g., wealth, fame) (Kasser & Ryan, 1996; Vansteenkiste et al., 2006). However, other research indicated that these components fluctuate. For example, perceived value may decrease in response to setbacks (de Ridder & Kuijer, 2006) and motivation has been shown to fluctuate on a daily basis in experience sampling studies (Sosin & Neubauer, 2024). These inconsistencies across findings highlight the need for a more unified theoretical framework to clarify when, for whom, and under what conditions components of goal representation remain stable or become subject to change.

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In addition to reflecting the inherently dynamic or stable nature of specific goal representation components, the patterns of observed change and stability may also be shaped by features of the measures and sample. First, components may vary in their test–retest reliability, and observed changes may reflect measurement error in components with lower reliability. Second, components differ in the number of dimensions they include. Aggregating across multiple dimensions tends to increase reliability but can also reduce sensitivity to subtle changes in any one dimension. As a result, components composed of more items may appear more stable simply because small shifts are averaged out. Third, components may respond to different aspects of goal pursuit, and if these aspects vary widely across individuals or goal types, systematic changes may be obscured at the group level. Thus, apparent stability may partially reflect heterogeneity in how different goals or people experience change. However, these methodological factors are unlikely to fully account for the observed differences in change across components. Because attainability was measured and analyzed in a manner similar to the other components, it is unlikely that methodological features alone explain why it showed greater change over the course of goal pursuit. Instead, the findings suggest that individuals selectively update certain components of goal representation as they strive toward their goals.

The multifaceted nature of goal representation is reflected in differences across components in their susceptibility to change during pursuit. Therefore, theoretical frameworks should consider the distinct temporal trajectories of individual components when incorporating multiple aspects of goal representation. Many classic goal-related theories, such as goal-setting theory, conceptualize multiple dimensions of goal representation, such as specificity and difficulty, as uniformly stable baseline predictors of goal-directed behavior (e.g., Locke & Latham, 2002). However, this approach may overlook important temporal variability in some components, such as perceived difficulty, which can shift over time as individuals strive towards their goals (Erez & Isen, 2002; Nuutila et al., 2021). In contrast, models that aim to explain the dynamic processes of goal pursuit, such as those addressing goal disengagement

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(e.g., Wrosch et al., 2003), emphasize fluctuations in components like attainability but often overlook differences among goals along more stable dimensions. To more accurately capture the role of goal representation in goal pursuit, theories should recognize that different components follow distinct temporal trajectories, specify when and how particular components are expected to shift during the course of pursuit, and explain how both baseline levels and within-person changes in these components influence goal-related processes and outcomes. From an assessment perspective, it is also important to recognize that components differ in their susceptibility to change. Components that are relatively stable are well-suited to serve as baseline characteristics for differentiating goals, whereas more dynamic components may require repeated assessment to understand the mechanisms through which they shape goal pursuit experiences. From a practical perspective, goal pursuit interventions should leverage components that are both influential in shaping goal-related outcomes and responsive to change. More stable components, in turn, can help tailor interventions to fit the distinct representational features of different goals. In summary, because goal representation is not a singular entity with unified properties, it is important to distinguish between stable and dynamic components when developing theory, designing assessments, and tailoring interventions.

In summary, the present project underscores the multifaceted nature of goal representation and offers a nuanced understanding of its role in shaping individuals' experiences across multiple goals and how specific components shift throughout goal pursuit.

Limitations

Heterogeneity in the goal sample. One of the key challenges in multiple goal pursuit research is the tradeoff between preserving ecological validity and controlling for confounding factors. In the present study, participants were asked to list their own goals with minimal constraints in order to capture the types of goals people naturally hold and pursue. This design enhances the

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representativeness of the goal sample and the external validity of the findings. However it also introduces considerable heterogeneity in the goal samples. Beyond the variance captured by goal representation components, participants' goals differed in several important ways. Goals varied in content, domain (such as academic, health, or interpersonal), temporal distance from initiation, and specificity regarding reference points or outcomes. By the end of the study, goals also differed in their status, with some being completed, others still ongoing or abandoned. At the between-person level, goal systems varied along multiple dimensions, including the number of goals individuals pursued and the degree of similarity or coherence among those goals.

These sources of variability introduce potential measurement challenges and complicate the interpretation of findings. For example, individuals may estimate their effort differently depending on the domain of the goal, and the time since goal adoption may influence perceived progress. In other words, the heterogeneity in goal samples likely contributes to measurement error and may reduce the strength of observed associations between goal representation components and goal pursuit outcomes. Variability in goal system characteristics at the individual level can also introduce confounding factors, despite the use of person-mean centered scores to isolate within-subject associations. For example, individuals pursuing a larger number of goals may experience greater resource constraints, which could influence both how they perceive their goals and their goal pursuit experiences.

This heterogeneity of the goal sample strengthens rather than undermines some key findings from this study. Observing prospective associations between goal representation components and pursuit outcomes across a wide variety of goals supports the robustness and generalizability of these relationships. Similarly, demonstrating configural invariance of the six-component structure across such diverse goals allows for a rigorous evaluation of its structural congruence over time. In both cases, the observed patterns emerge despite substantial variation in goal content, domain, and framing. Additionally, measures of progress and satisfaction were tailored to the type of goal in order to reduce

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the mismatches between the nature of the goal and the evaluation method, thereby reducing measurement errors. Heterogeneity is an important feature of personal goals. Instead of eliminating it, more empirical studies are needed to examine how other goal characteristics, such as domain, temporal scope, and framing, interact with individual goal representation components to shape pursuit experiences.

Limitations of Assessment Timing and Observation Window. Another limitation lies in the use of two assessment timepoints. This design limits the ability to disentangle measurement-related errors and changes in the goal itself from changes in individuals' perception of the goal. In other words, observed differences in component scores could reflect shifts in item interpretation, adjustments to the goal's content, or changes in goal representation that occur alongside the pursuit process. This ambiguity complicates the interpretation of observed component changes and limits the ability to identify the underlying mechanisms. Furthermore, with only two observations, the design cannot capture potential non-linear change trajectories. Despite these limitations, they are less likely to undermine the main aim of comparing trajectories across goal representation components, as any biases from measurement error or goal changes would likely affect all components in a similar way. Several design features were also implemented to reduce the risk of misattributing changes. To promote consistency in interpretation, participants were reminded at each follow-up of the exact wording they had used to describe the goal at baseline, along with the milestones they had set. In addition, they were asked to indicate whether the goal had been adjusted at each follow-up, so that such goals could be excluded from the analysis to avoid conflating changes in representation with changes in the goal itself.

Additionally, the present study chose to track goal progress over a three-month period in order to capture within-person change while maintaining a high participant retention rate. However, this fixed temporal window may overlook meaningful variability that occurs on shorter timescales, such as daily fluctuations in motivation (Sosin & Neubauer, 2024), or on longer timescales, such as gradual changes in

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perceived value (Bühler et al., 2019). Given the heterogeneity of goals people have, applying a uniform time window across all goals may not fully capture the dynamics of goal pursuit. For some goals, meaningful progress or reevaluation may occur within days, while others may require much longer durations to reveal change. As an alternative, future research could consider using event-based assessments that anchor measurement to key transition points in a goal's life cycle (e.g., major setbacks, completed subgoals, or changes in goal status). Such an approach would allow for a more individualized and context-sensitive understanding of how goal representations evolve over time.

Limited Collections of Goal Representation Items. The current project was one of the first studies to explore the structure of goal representation using a broad, data-driven approach. We provided new insights into the nature of goal representation by incorporating characteristics of goals across multiple theories. Despite our effort to collect a comprehensive list of items, some dimensions were missed. For example, we did not include items directly assessing the estimated cost of goal pursuit. Items such as stress or negative impact could affect the valuation of goals and it would be informative to see how these items with negative valence fit into the structure. Another aspect of goal representation that was excluded was goal framing, such as approach vs avoidance goals and attainment or maintenance goals. We did include these items in preliminary studies and found them to be highly bimodal to the point of being statistically categorical. It was, therefore, inappropriate to include them in a factor analysis with continuous variables. Yet, these dimensions also reflect people's motivation, and excluding them might affect the structure of goal representation (Dickson & MacLeod, 2004; Elliot, 1999).

In addition to the omission of certain theoretical dimensions, some of the included items may benefit from refinement to improve their psychometric properties and conceptual clarity. For instance, two items, attractiveness of progress and attractiveness of achievement, were highly correlated ($r = .70$), suggesting potential redundancy and conceptual overlap. Including both may have inflated the

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variance explained by this factor while contributing limited unique information. In contrast, one item designed to assess perceived control did not load strongly on any factor, indicating weak alignment with the latent dimensions captured in this structure. Although these limitations did not compromise the overall conceptual structure, they may have introduced measurement noise that attenuates model fit . Future research should revisit item wording, remove or revise highly redundant items, and explore additional indicators for underrepresented constructs to enhance the overall psychometric quality of the scale and the interpretability of its factor structure.

Although the components of goal representation were significantly associated with goal pursuit outcomes, the effect sizes were modest, with models explaining approximately 12% to 16% of the variance at the within-person, between-goal level. These small effects are not surprising given that the models were intentionally limited to goal representation components and did not include other known influences on goal pursuit, such as individual differences, contextual constraints, or situational fluctuations. The purpose of this study was not to construct a comprehensive predictive model of goal attainment, but rather to demonstrate how different facets of goal representation uniquely and collectively relate to pursuit experiences when comparing across a person's own goals. From this perspective, the findings underscore that goal representation explains meaningful differences in progress and related experiences at the within-person, between-goal level, even though many other factors undoubtedly also contribute.

Future Directions

To advance the study of goal representation, future research should refine both the item-level measurement and the multifaceted structure of the construct. Items used in the present study warrant revision to improve clarity, reduce redundancy, and ensure strong alignment with their intended components. Expanding the item pool to capture underrepresented dimensions, such as goal framing

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and perceived cost, would also enhance content validity. Beyond individual items, the multifaceted structure identified through exploratory analysis should be confirmed using more rigorous psychometric techniques, such as confirmatory factor analysis and measurement invariance testing. These methods are necessary to establish the structural reliability of the model over time and across diverse populations. Following item refinement and structural validation, future work should also aim to identify a parsimonious set of items that reliably capture each component of goal representation. A shorter, well-validated scale would facilitate broader adoption of a multifaceted approach and help address the current fragmentation in goal representation research.

The present study highlights the importance of relative goal representation by showing that individuals' experiences with a given goal depend not only on how that goal is perceived in absolute terms, but also how it compares to their other goals. Building on this insight, future research can examine how relative goal representation shapes broader regulatory challenges that are unique to multiple-goal contexts. Adaptive strategies for managing multiple goals involve more than striving toward each one individually; they also require prioritization, switching, freezing, and even disengagement to navigate limited resources and competing demands (Scholer et al., 2024). For example, pursuing a goal with high value may be motivating, but when all goals are viewed as equally valuable, individuals may struggle to identify which goal to prioritize. Little research has evaluated whether insufficient differentiation in goal representation contributes to internal conflict, delayed action, or ineffective resource allocation. At the same time, adopting a multifaceted approach to goal representation opens doors for characterizing individuals' multiple goals as a holistic system. Instead of treating goals as independent units, future research could adopt person-centered approaches with latent profile or cluster-based analysis to identify distinct patterns across multiple goal representation components and use them to characterize an individual's broader goal system. Such approaches may

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offer valuable insight into how the overall configuration of a person's goals influences multiple-goal pursuit experiences, including decision-making efficiency and well-being.

The third potential future direction concerns understanding how and why goal representations change across the course of pursuit. A central task in this line of work is to distinguish changes in goal representation from measurement error. This is particularly difficult given that goals naturally evolve over time. One promising approach is to administer short-interval retest assessments during periods when individuals are not actively engaging with a long-term goal, such as immediately after goal selection but before major effort or progress has occurred. Beyond assessing reliability, future research should also investigate which components are most susceptible to change under what contextual conditions. Event-based or experience sampling designs triggered by setbacks, subgoal completions, or moments of goal switching or disengagement could capture the unfolding dynamics of representation in real time. Finally, components like attainability warrant closer investigation to understand the micro-processes through which change occurs. Future research should systematically evaluate not only features of the focal goal, such as setbacks, feedback, or adjustment of strategies, but also contextual influences. These may include progress or failure in other concurrently pursued goals, the observed success or failure of similar goals in one's social environment, and broader fluctuations in perceived self-efficacy or available resources. Moreover, perceived attainability may participate in a reciprocal process, where changes in engagement, affect, or effort feed back into how attainable a goal feels, creating self-reinforcing cycles. Capturing these interdependencies will require designs that are sensitive to both temporal dynamics and contextual cues.

In summary, this first project provides empirical support for conceptualizing goal representation as a multifaceted construct that varies across individuals' goals and evolves over time. By demonstrating that distinct components of goal representation are differentially associated with goal pursuit outcomes and exhibit varying degrees of temporal stability, this study advances our understanding of how people

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mentally represent their goals and how these representations shape the pursuit process. The results underscore the importance of adopting a multifaceted approach and a within-person perspective when examining the influence of goal representation in the context of multiple-goal pursuit. As such, this work lays the foundation for developing comprehensive and dynamic models of goal representation that capture both its multifaceted structure and its evolving role throughout goal pursuit.

CHAPTER III: EXPANDING THE UNDERSTANDING OF GOAL-IDENTITY RELATIONS IN A MULTIPLE-GOAL MULTIPLE-IDENTITY CONTEXT

Introduction

The “Self” in Goal Pursuit

The pursuit of personal goals is inseparable from the self. People's beliefs about who they were, who they are, and who they hope to become guide their personal growth journey like north stars. These beliefs are grounded in the self-concept, defined as the cognitive structures that organize self-relevant content and allow individuals to interpret their experiences and maintain a coherent sense of identity and worth (Markus, 1977).

The self-concept influences all phases of goal pursuit. In the pre-adoption phase, individuals define desired end states based on possible selves, defined as mental representations of who they could become and what they might achieve (Markus & Nurius, 1986). These imagined futures generate a pool of self-relevant directions from which potential goals are considered. In the adoption phase, people decide to pursue a goal based on its expected value (Wigfield & Eccles, 2000). The self-concept plays a central role in shaping this value by influencing two core evaluations: perceived attainability (reference) and subjective importance (Berkman et al., 2017). Once a goal is selected, the self-concept continues to shape how it is pursued. People often prefer means of pursuit that feel self-consistent, influencing their choice of strategies and actions (Berger & Heath, 2008; Escalas & Bettman, 2005; Gao et al., 2009). During goal striving, the self provides a reference point for interpreting progress and serves as a major source of motivation for sustained effort (reference). Finally, in the post-outcome phase, goal success can reinforce self-perceptions, while failure may trigger reevaluation or adjustment of the self-concept.

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Across these stages, the self-concept and goal pursuit are mutually influential, evolving together through a dynamic, reciprocal process.

The self-concept is a multifaceted structure composed of distinct identities (Greenwald & Pratkanis, 1988; Markus & Wurf, 1987; Suszek, 2007). Each identity represents a relatively stable subset of self-representations that encompass core values, social roles and long-term aspirations (McAdams, 2013; Swann & Bosson, 2010; Berkman et al., 2017). These identities are cognitively linked to subordinate traits and personal memories that shape how individuals perceive themselves within specific domains of life (Garczynski & Brown, 2013; Showers, 1992; Zeigler-Hill & Showers, 2007).

Within goal research, identity provides a precise and functionally relevant lens for examining the role of the self in goal representation and pursuit. Like goals, identities are diverse, contextually situated, and vary in importance. Identities may reflect personal roles (e.g., aspiring writer), relational ties (e.g., mother; Andersen & Chen, 2002), or collective group memberships (e.g., community volunteer; Brewer & Gardner, 1996). Depending on the situation, contextual cues such as social environments, advertisements, or tasks can activate these identities and guide subsequent thoughts and behaviors (Bolton & Reed, 2004; Markus & Wurf, 1987; Reed et al., 2012). In addition to their diversity and contextual sensitivity, identities also vary in how central they are to a person's self-concept—that is, the extent to which an identity defines one's sense of self across time and situations (Aquino et al., 2009; Holmes et al., 2019; Settles, 2004; Touré-Tillery & Gamlin, 2022). These features mirror key properties of goals, making identity a natural bridge between the self and the goals. Moreover, not all aspects of the self-concept play an active role in goal pursuit. Instead, it is often the salient identity that guides which goals feel relevant and worth pursuing. For example, a person may feel highly motivated to exercise when their "athlete" identity is activated, but not when their "parent" identity is. Theoretical frameworks such as Identity-Based Motivation Theory (Oyserman, 2009) and the Identity-Value Model (Berkman et al., 2017) support this view, showing that salient identities shape the perceived value of

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goals and strengthen motivation. Finally, compared to the abstract construct of self-concept, identity offers a more practical target for empirical research. Identities can be listed, categorized, and evaluated, making them suitable for systematically examining and manipulating the dynamic relationship between the self and goal representation and pursuit.

The Role of Goal-Identity Relations in Goal Pursuit

Goal-identity relations refer broadly to the ways in which a personal goal is associated with a specific aspect of self. This umbrella term encompasses various forms of relationships described in the literature, such as alignment, congruence, relevance, and integration. A goal's relation to one's identity is a critical determinant of how it is mentally represented, particularly with respect to its subjective value. In turn, this subjective value plays a central role in shaping goal pursuit behaviors. Within a value-based decision-making framework, as specified in the introduction to Study 1, people are more likely to select, prioritize, and commit to goals that hold higher subjective value. Therefore, relevancy to identity is a potential lever to motivate goal pursuit. The Identity-Value Model (IVM) posits that identity serves as an important source of subjective value: individuals assign more value to goals to the extent that they are perceived as relevant to a salient identity (Berkman et al., 2017). The contribution of identity to value is not uniform; it depends on the salience of the identity in a given context, the degree of relevance between the goal and the identity, and specific attributes of the identity, such as its centrality or valence. While IVM focuses on self-regulation, parallel frameworks have emerged across domains such as education (Eccles, 2009), consumer behavior (Reed II et al., 2012), and collective actions (Mackay et al., 2021), suggesting broad consensus that goal-identity relations influence motivation and goal striving behaviors by shaping the perceived value of goals.

Empirical research provides converging support for this claim. One line of evidence comes from research on intention formation and goal adoption. For example, women who internalize traditional

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gender roles are more likely to pursue gender-congruent career goals (Evans & Diekmann, 2009), and individuals with interdependent self-construals tend to prioritize communal over agentic goals (Van Horen et al., 2008). Furthermore, Reese and Dietrich (2014) found that the subjective value assigned to academic tasks mediated the association between identification with a student identity and intention to study. However, these studies often avoid directly assessing how relevant a specific identity is to a particular goal for a given individual. Instead, they infer identity–goal relevance based on assumed alignment between social categories and goal domains. For example, academic tasks are presumed to be relevant to a student identity. While this approach supports the idea that different identities can motivate different types of goals, it overlooks individual variability in how personally relevant a goal feels in relation to a specific identity. Another line of evidence comes from experimental studies demonstrating that priming specific identities increases engagement in identity-congruent behaviors, such as voting, volunteering, or healthy behaviors (Bryan et al., 2011; Burger & Caldwell, 2003). For example, individuals who were encouraged to adopt a self-as-doer identity, such as seeing themselves as a healthy eater, reported stronger intentions to maintain a healthy diet and demonstrated greater healthy food consumption over a six-week period compared to those in a control group (Brouwer & Mosack, 2015). Due to the nature of priming and conditioning paradigms, these studies are typically limited to particular domain-specific goals.

Beyond shaping subjective value, identity also influences how people act and interpret their experiences during goal pursuit. According to the Identity-Based Motivation Model (IBM), individuals are motivated to act and make sense of the world in ways that are congruent with their identities (Oyserman, 2009). Consistent with the predictions of the Identity-Value Model, this framework proposes that identity-congruent behaviors are more likely to be enacted and sustained than identity-incongruent or identity-irrelevant ones. However, rather than emphasizing valuation as a universal mechanism, the identity-based motivation framework draws on the fundamental drive for self-consistency. People are

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more likely to maintain behaviors that reflect and affirm their self-concept (Bracken, 1996; Markus, 1977; Kwasnicka et al., 2016). In addition, individuals interpret their goal pursuit experiences through the lens of whichever identity is salient in the moment, particularly when evaluating ease or difficulty. When an accessible identity feels congruent with the task at hand, people are more likely to interpret ease as a sign of high attainability and difficulty as a signal of high importance (Oyserman, 2017). According to expected value theory, both attainability and importance are critical for sustaining motivation (reference). Thus, identity congruence acts as a motivational amplifier, shaping not only what people do, but also how they make sense of their progress.

The IBM framework emphasizes that identity–goal congruence is highly context-dependent, shaped by the social environment and situational cues that render particular identities salient (Oyserman, 2009). What feels identity-congruent, or the degree of congruence, can therefore fluctuate from moment to moment. Despite this emphasis on dynamic, context-specific goal–identity relations, relatively few empirical studies directly assess or manipulate identity congruence in ecologically valid settings. Most research relies on abstract cognitive cues to momentarily align the environment with a targeted identity, using tools such as graphs, words, or subtle framing manipulations. For example, showing students an overlapping Venn diagram linking their current self to their ideal occupation increased school engagement and endorsement of school-relevant strategies compared to showing a non-overlapping diagram (Nurra & Oyserman, 2018). In another study, adults primed to think of retirement as occurring in “10 years” rather than “10,950 days” reported weaker connection to their future retiree self and were less willing to invest in long-term outcomes (Oyserman et al., 2015). While these studies offer compelling evidence for the malleability of identity–goal congruence and its influence on momentary goal-striving behaviors, they remain largely confined to controlled experimental contexts, limiting their relevance for understanding the complexity and variability of real-world goal pursuit. Complementing this work, cross-sectional studies show that individuals who view a

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given identity as more central report greater commitment, effort, and persistence in domains relevant to that identity. For example, students who perceive their student identity as more central demonstrate stronger academic engagement and better performance (Bowman & Felix, 2017; Holmes et al., 2019). These findings, while correlational, reinforce the broader claim that goal-identity relations matter for sustained goal pursuit in everyday life.

The impacts of identity extend beyond the outcomes of goal pursuit to influence self-perception and well-being. Many identities evolved through the pursuit of important goals, with self-narratives being updated along with successes and failures (Conway & Pleydell-Pearce, 2000; Singer, 2004). Moreover, striving toward goals that are concordant with an individual's values and identities enhances well-being by satisfying basic psychological needs (Hope et al., 2019; Sosin & Neubauer, 2024). At times, identity can act as a barrier to goal pursuit. When individuals internalize certain stereotypes and norms associated with a specific identity, they may adopt a "why try" mentality, avoiding goals associated with that identity (Corrigan et al., 2009). For instance, women are less likely to connect STEM careers with their core values and are less likely to pursue such careers (Diekmann et al., 2010). The relative stability of identity can also hinder adjustability to new circumstances. For example, retired athletes often need to cultivate new identities before fully embracing their next life stage with new goals (Lavalley & Robinson, 2007).

Goal-identity relations play a central role in shaping how people pursue their goals, influencing goal representation, motivation, self-perception and well-being. These relations are also multifaceted, varying in strength, directionality, and valence. To capture such complex relations, I introduce the construct of a *goal-identity connection*, defined as the perceived influence between a specific personal goal and a specific identity. Building on existing theories that emphasize goal-identity congruence (Oyserman, 2009), relevance (Berkman et al., 2017), and alignment (Sheldon & Elliot, 1999), this construct offers a more subjective and flexible conceptualization of the goal-identity relations. Rather

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than inferring alignment based on domain similarity (e.g., assuming a learning goal is aligned with a student identity), goal–identity connection is assessed directly from individuals’ perspective and reflects any perceived psychological linkage, regardless of whether the goal and identity share content, values, or social context.

Challenges in Measuring Goal–Self Relations

As previously discussed, goal–identity relations offer a reasonably precise and functionally relevant lens for examining the role of the self in goal pursuit. However, when it comes to assessment, many frameworks rely on measures that quantify degree of association, whether conceptualized as alignment, congruence, or relevance, between a goal and a generalized sense of self, rather than with specific identities. A widely studied construct in this area is self-concordance, which captures the extent to which a goal reflects one’s authentic interests and values and is measured through a composite of motivational types (Sheldon & Elliot, 1999). Rather than assessing the relationship between a goal and the self explicitly, this framework uses motivational quality as a proxy for goal–self alignment, operationalizing this relationship through the degree to which a goal is pursued for autonomous reasons (e.g., intrinsic enjoyment or personal importance). It assumes that more autonomous forms of motivation reflect a stronger integration between the goal and the self. Another construct, goal fusion, reflects the perceived overlap between the self and a specific goal and is typically assessed using a single Venn diagram item (Burkley et al., 2015). Similarly, other studies have relied on single-item self-report measures, such as “alignment between my goal and who I am” or “alignment with my identity” (Shin et al., 2019). These measures presume that individuals have a clearly defined and accessible self-concept and fail to capture individual differences in how the self is mentally represented. Moreover, they are often insensitive to the dynamic, context-dependent nature of self-representation. Theoretical frameworks, such as IVM and IBM, emphasize that different identities become salient in different

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situations and shape how goal–identity relations influence goal pursuit. However, when relations are measured with a global or abstract notion of the self, it becomes difficult to detect how a specific goal relates to specific identities—or how those relations may vary across contexts.

Because most frameworks operationalize the self as a unified construct, they often overlook the fact that individuals hold multiple identities. According to self-complexity theory, the self-concept functions as a mental structure that organizes distinct identities into a cohesive sense of self, with different identities becoming active in different contexts (Linville, 1987). Yet most existing measures collapse across these self-aspects, treating the self as a single entity and masking how a given goal may form different connections with different identities. As a result, they fail to capture whether a goal is connected to a broadly integrated set of identities, forms a one-to-one connection with a single domain specific identity, or connects to disjointed clusters of unrelated identities.

A Conceptual Framework Integrating Multiple Goals and Identities

Assessing how a goal connects to one’s multiple identities is not only more ecologically valid than previous approaches, but also provides more nuanced insights into the role of the self in goal pursuit. Compared to approaches that examine the connection between a specific goal and a single identity, incorporating multiple identities allows researchers to capture variation in how a goal connects differently to distinct aspects of the self-concept. Mapping how a goal connects with multiple identities may also help explain how the self can serve as a stable source of motivation, even when individual identities are dynamic and context-dependent. For example, when one identity is under threat, others that connect to the same goal may compensate by serving as the source of subjective values. Likewise, even if a particular identity supports goal pursuit only when it becomes salient in a specific context, having a goal connected to multiple identities increases the likelihood that it will feel meaningful and motivating across different situations.

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Examining how a specific goal connects to multiple identities offers valuable, goal-centric insights into the role of self in goal pursuit, yet this approach overlooks a crucial layer of complexity: people rarely pursue just one goal. As discussed in Study 1, people typically pursue multiple goals simultaneously. Each of these goals may connect to different subsets of their identity, meaning the self does not support all goals in the same way. These variations in goal–identity connections are particularly relevant for understanding well-being during goal pursuit. Self-concordance theory (Sheldon & Elliot, 1999) highlights the importance of pursuing goals that align with the self, suggesting that such alignment enhances well-being over time. Supporting this view, both cross-sectional and longitudinal studies have shown that goals rooted in personal values or core identities are associated with greater positive affect and life satisfaction (Hope et al., 2019; Sheldon et al., 2004; Sheldon & Houser-Marko, 2001; Sheldon & Kasser, 1998).

Studies connecting goals to identity typically take one of two approaches: they either focus on a single goal and track within-person fluctuations in subjective well-being (Perunovic et al., 2011), or they aggregate across an individual’s goals to compute a general index of alignment with a unified sense of self (Hope et al., 2019; Litalien et al., 2013). The first approach overlooks meaningful differences between goals. The second approach, although more common, treats the self as a singular, unified construct, collapsing across distinct identities. As discussed above, this masks variations that may matter for the impact of goal-identity relations in goal pursuit, such as whether a goal draws on a broad set of identities or relies on one specific identity. On top of this, when aggregating the relations across multiple goals to a general sense of self, this approach further assumes that all goals relate to the same self-concept or value system. In other words, it captures only individual differences in the overall strength of alignment between a person’s goals and the self. However, when the self is conceptualized as a structure composed of multiple identities, the variance across individuals is no longer limited to strength alone. It also includes how goal–identity connections are distributed across a person’s multiple goals

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and identities. For example, one person may have all their goals connected to the same central identity, while another may show a more balanced distribution, with different goals connected to different identities. These differences in connection patterns may have meaningful implications for the role of the self in supporting well-being in a multiple-goal pursuit context.

No theoretical model or empirical study has examined individual differences in how people's multiple goals connect to multiple identities. To address this gap, I propose a new framework that incorporates goals and identities into an integrated conceptual system composed of individual goals and identities, the connections among goals and among identities, and the goal–identity connections. This integration is theoretically grounded in two established systems: a goal system composed of multiple interconnected goals and means (goal system theory; Kruglanski et al., 2002), and a self-concept system composed of multiple identities and their interconnections (self-complexity theory; Linville, 1987). In both systems, the way individual components are organized reflects meaningful individual differences, and the structure, in turn, can shape how each component is perceived. For example, individuals with more integrated goal systems, where lower-order goals facilitate higher-order goals, are more likely to achieve all their goals (Knecht & Freund, 2017; Tomasik et al., 2017). Conversely, structural features such as multiple goals sharing the same means can reduce the perceived attainability of those goals (Kruglanski et al., 2013). In parallel, a self-concept system composed of a greater number of distinct yet connected identities is associated with greater psychological resilience and well-being, as the diversity of self-aspects buffers against threats to any single identity (Linville, 1987). Additionally, the structural position of a given identity within the system, such as its centrality or degree of interconnectedness, can influence its perceived importance (Aquino et al., 2009; Settles, 2004).

Both systems consist of multiple, interacting components; both exhibit meaningful individual differences in their structure; and in both cases, these structural features influence how individual components are perceived. Given these shared properties, it is theoretically valid to incorporate them

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into a single system that captures the multifaceted relations between goals and identities.

Conceptualizing goals and identities together as part of a unified structure allows researchers to examine not only the overall degree of connection between goals and the self, but also how the broader pattern of connections between multiple goals and multiple identities may support or constrain goal pursuit and well-being.

To capture the multifaceted structure of goal–identity connections and overcome the limitations of global self measures, I introduce a novel network-based framework that conceptualizes goals and identities as nodes in an integrated system. In this structure, each node represents either a goal or an identity, and connections between them (edges) reflect the perceived influence between a specific goal and identity, consistent with the construct I introduced earlier as a goal–identity connection.

Within this framework, I define goal–identity integration as the degree to which a single goal connects to multiple identities, quantified by the number of goal–identity connections it has. While ***goal–identity integration*** focuses on a single goal’s connection to multiple identities, individuals typically pursue several goals that each relate to different subsets of their identity. Together, these goal–identity connections form an individual’s ***goal–identity system***, defined as a personalized network that reflects how goals and identities are interconnected.

This network-based framework draws on graph theory and social network analysis, which offer robust tools for quantifying the structure of interconnected systems and variance between people in that structure (Borgatti et al., 2009; Lorrain & White, 1971). It is particularly well suited for modeling the complexity of goal–identity relations. First, it allows researchers to move beyond dyadic assessments to examine nuanced patterns of interconnections among multiple goals and identities within a cohesive structure. Additionally, it accommodates the complexity of these relations, as edges can vary not only in their presence but also in direction, strength, and valence. Second, this framework supports analysis at both the goal level and the individual level. At the goal level, metrics such as node degree quantify goal–

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identity integration, allowing researchers to examine how the number of identity connections relates to a goal's perceived value, attainability, or motivational quality. At the individual level, normalized network indices provide a novel way to quantify how a person's goals are embedded within a complex self-concept, including density (the proportion of actualized connections out of all possible connections), centralization (the extent to which connections are unevenly distributed), and modularity (the degree to which the network segments into distinct clusters; Borsboom & Cramer, 2013). Finally, because the network specifies which goals connect to which identities, it enables future research to test whether attributes of goals or identities moderate the effects of goal–identity integration on goal pursuit experiences.

Previous work has applied network structures to represent the organization of multiple identities (Elder et al., 2023) and their links to autobiographical memories (Enz, 2024). Other researchers have also proposed network models as a promising approach to understanding goal systems (Kruglanski et al., 2018) and multiple-goal pursuit (Kung & Scholer, 2021).

Study Aims

My second project introduces a novel network-based approach to describe goal-identity systems, providing an expanded framework for understanding the multifaceted ways in which goals and identities connect. While extensive theoretical and empirical evidence underscores the importance of the relationships between goals and identities, research has primarily assessed the degree to which goals align with an individual's general sense of self, overlooking the complexity of how goals relate to an individual's multiple identities. I begin with the observation that individuals have multiple goals and identities, and propose their relationships can be operationalized as a goal-identity network, which consists of pairs of connections between specific goals and specific identities. I conducted a cross-sectional study to evaluate whether goal–identity networks can feasibly and meaningfully quantify how

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individuals' multiple goals relate to their multiple identities. The findings provide initial insights into how the breadth of a goal's integration with various identities is associated with its representation, and how the overall configuration of an individual's goal-identity system relates to their well-being.

Future research can adopt this framework to explore how representations of specific goals influence particular aspects of self-perception, as well as how evaluations of certain identities empower or hinder the pursuit of specific goals. Moreover, this framework can help researchers contextualize and personalize interventions to foster particular goal-identity connections or to prioritize goals based on their positions within the goal-identity network.

Aim 1: Characterize the relationships between goals and identities using a network structure.

The first aim of this study is to describe how individuals' goals and identities are connected using a network structure. At the goal level, I aim to characterize the goal–identity integration using degree centrality. At the individual level, I will describe the overall structure of each person's goal–identity system in terms of network density, centralization, and modularity.

These descriptive analyses serve two purposes: first, to evaluate the feasibility and conceptual validity of applying a network model to goal–identity relations; and second, to uncover general patterns in how multiple goals connect to multiple identities. I hypothesize that most goals will connect to multiple identities and that goal–identity systems will vary in strength, centralization, and clustering across individuals. These hypothesized patterns would provide evidence for the feasibility of using goal–identity networks by showing that participants can meaningfully nominate diverse and structured pairwise connections between specific goals and identities. They would also support the conceptual validity of this approach by demonstrating that goal–identity relations are neither uniformly distributed nor reducible to a unidimensional alignment score, but instead vary in ways that warrant modeling them as a structured system.

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Aim 2: Examining the associations between goal-identity integration and goal value and striving behaviors. The second aim of this study is to examine the associations between goal–identity integration, on the one hand, and goal representation and goal pursuit experience on the other. Building on research focusing on the alignment between a goal and a general sense of self, this study introduces a network-based framework that conceptualizes goal–identity relations as the breadth of a goal’s integration with multiple identities. I hypothesize that goals connected to more identities will be perceived as more valuable. This association would provide initial support for the convergent validity of goal–identity integration, as it mirrors established associations between goal–self alignment and goal value.

Additionally, I plan to explore whether the influence of goal–identity integration extends beyond perceived value to other aspects of goal representation, such as attainability and external motivation, as well as indicators of goal pursuit experiences, including commitment, effort, action crisis, and satisfaction with progress. My preliminary hypothesis is that goal-identity integration will relate meaningfully to multiple aspects of goal representation and pursuit experience

Aim 3: Examining the associations between goal-identity systems and well-being. The third aim of this study is to examine whether the configuration of individuals’ goal–identity systems accounts for meaningful differences in well-being. Prior studies have demonstrated that people who pursue self-concordant goals tend to report greater life satisfaction. However, these studies typically assess individual differences using an average alignment score between each goal and a general sense of self, overlooking variance in how multiple goals and identities are connected. This study addresses that gap by introducing a network-based framework that represents goals and identities as an interconnected system and evaluating whether differences in system structure, beyond alignment strength alone, represent meaningful psychological variation. Specifically, I hypothesize that individuals who have goal–

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identity systems that are more interconnected and centralized (i.e., higher density and centralization) and less fragmented (i.e., lower modularity) will have higher levels of life satisfaction, reflecting a more cohesive and integrated goal–identity relation.

Method

Participants

I recruited 313 undergraduate students at the University of Oregon for this online cross-sectional study. Before being recruited, all participants met the following four criteria: being above 18 years old, being native English speakers, currently not being diagnosed with depression, and living in the U.S. A power analysis for multiple linear regression was conducted with .85 power to detect a small to medium effect size of .03 (f^2) at the standard .05 alpha error probability with two predictors. The results recommended a sample size of 290, and therefore we set our recruitment goal for each sample at 300 to accommodate potential attrition and missing data. We expected participants to have 3 or 4 goals on average based on data from pilot studies. Thus our targeted sample size would be sufficiently powered at the individual level and well-powered at the goal level.

Material

Personal Goals and Identities. Similar to Study 1, I asked participants to list up to six goals that they were currently pursuing and anticipated finishing or at least making progress on over the next three months. For identities, I asked participants to list up to fifteen identities they held for themselves or for the groups to which they belonged, and then to categorize each identity into ten categories.

Goal-Identity Connection strength. For each nominated goal-identity pair, I asked participants to evaluate their connection using two items: “To what extent, if any, do you think your goal X shapes

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your identity Y?” and “To what extent, if any, do you think your identity Y shapes your goal X?” These items were rated on a 7-point scale ranging from “not at all” to “very much.”

Goal Representation. I selected thirteen single-item measures of goal representation from the thirty-one items included in Study 1. Based on the conceptual structure from Study 1, I included dimensions with strong loadings on their primary factor to balance variance coverage with study feasibility. All items were assessed on a 7-point Likert scale, except the attainability item, which was assessed on an 11-point Likert scale. (See Appendix B for a complete list of goal representation items.)

Striving Behaviors and Goal Progress. I selected three measures of goal striving behaviors from the eight dimensions included in Study 1. I included commitment, effort, and action crisis as proxies for future persistence. Additionally, I included an item asking, “How much progress have you made towards this goal?” rated on an 11-point scale ranging from 0% to 100%, as a measure of current goal progress. I also measured progress satisfaction with an item asking, “How satisfied are you with this level of progress?” rated on a 7-point scale ranging from “extremely dissatisfied” to “extremely satisfied.”

Individual Differences. I included four measures of individual differences in well-being and self-perception. Specifically, I included the Life Satisfaction Scale (Diener et al., 1985), Perceived Stress Scale (S. Cohen et al., 1983), Life Engagement Test (assessing purpose in life) (Scheier et al., 2006), and Self-Concept Clarity (Campbell et al., 1996).

Procedure

This online cross-sectional study aimed to create a goal-identity network for each participant. Participants completed three types of tasks to define the network's nodes, edges, and edge weights.

First, upon completing the screening and informed consent process, participants learned our definition of goals and identities through multiple examples with various framings and content. Then, they listed the goals they were currently pursuing and the identities they endorsed, which served as the

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nodes in the network. Participants could list up to six goals and fifteen identities to ensure that the networks contained a sufficient number of nodes while managing the study's overall duration. Next, participants created edges by identifying connections between goals and identities. We provided examples illustrating how goals might shape identities and vice versa. Using a matrix with identities as rows and goals as columns, participants nominated pairs of connected goals and identities by reviewing each goal column-by-column and selecting all identities connected to that goal. Finally, participants rated the strength of connection for each nominated pair to determine the edge weights. They rated, separately, the extent to which each goal shaped the identity and the extent to which each identity shaped the goal, capturing any asymmetrical relationships. The order of these pairwise rating tasks was randomized.

After constructing the network structure, participants rated each of their goals and identities on various dimensions and completed standardized well-being scales and personalized assessments as described above.

Analysis Plans

Generating Goal-Identity Network Index. The constructs, levels of analysis, and corresponding network measures are summarized in Table 10. I plan to generate one goal-level index and three individual-level indices to describe the connections between an individual's goals and identities using a network structure. Because individuals report varying numbers of goals and identities, all indices will be standardized by network size. At the goal level, I operationalize goal-identity integration as the ***standardized degree centrality*** of a goal within a goal-identity network. This index is calculated as the number of identities connected to the goal (i.e., the number of goal-identity edges nominated for that goal), divided by the maximum possible number of connections (i.e., the total number of identities in the network). This metric reflects the **breadth** of goal-identity integration.

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At the individual level, I include three common structural indices to characterize the overall configuration of the goal–identity system:

- **Density**, defined as the proportion of nominated goal–identity edges out of the maximum number of possible edges (i.e., number of goals × number of identities);
- **Centralization**, defined as the normalized sum of differences between the node with the highest degree centrality and the degree centrality of every other node in the network;
- **Modularity**, defined as the number of distinct connected components divided by the total number of nodes in the network.

All indices are scaled to range from 0 to 1 to allow comparisons across networks of different sizes.

Table 10: Operational Definitions and Network Measures for Goal–Identity Constructs

Construct	Levels	Operationalization	Measure / Index
Goal-Identity Connection	Goal-Identity Pair (Edge)	Perceived presence of influence between a specific goal and a specific identity	Binary edge in the goal–identity network, based on participant response to: “Select all identities shaped by or shaping this goal”
Goal-Identity Integration	Goal (Node)	Extent to which a goal is connected to the full set of identities a person nominated	Standardized degree centrality : number of connected identities ÷ total identities
Goal-Identity System	Individual (Network)	Overall interconnectedness between goals and identities	Network density : number of nominated edges ÷ total possible edges (goals × identities)
		Degree to which connections are concentrated around one or few nodes	Network centralization : normalized sum of (max node degree – each node’s degree)
		Extent to which the network forms separate clusters	Network modularity : number of connected components ÷ total number of nodes

Aim 1. To characterize the prevalence of goal–identity connections, I will calculate the percentage of goals connected to zero, one, or multiple identities. Next, I will compute the mean,

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standard deviation, range, and distribution of four standardized network indices, namely degree centrality, density, centralization, and modularity, to describe goal–identity integration at the goal level and the overall configuration of goal–identity systems at the network level. Lastly, to quantify the proportion of variance in goal–identity integration attributable to differences between versus within individuals, I will fit a random-intercepts model and estimate the intraclass correlation coefficient (ICC).

Aim 2. I will use a multilevel mixed model to examine the associations between goal-identity integration and goal representation, with a particular focus on goal value. First, I will conduct an exploratory factor analysis (EFA) on the current subset of items to identify the underlying structure of goal representation and generate factor scores for each component. Then, I will use an MLM model with random slopes and intercepts to estimate the fixed effect of standardized weighted centrality on the grand-mean centered value component score, accounting for the nested structure of goals within individuals. Additionally, I will include goal order and network size as covariates to control for potential confounding factors.

The basic model is specified as:

$$\text{Goal Value}_{ij} = \beta_0 + \beta_1(\text{Standardized Weighted Centrality}_{ij}) + u_{0j} + \epsilon_{ij}$$

Aim 3. I will use multiple linear regression models to examine the associations between configurations of goal-identity systems and well-being, with a primary focus on life satisfaction. Specifically, I will model life satisfaction as a function of goal-identity network density, centralization, and modularity individually, and I will include network size as a covariate to control for potential confounding effects.

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Results

Aim 1

The first aim of the study was to characterize the relationships between goals and identities using a network-based framework. I began by describing the number of goal–identity connections nominated for each goal to provide an initial overview of how individual goals relate to a broader system of personal identities. As shown in Table 11, the majority of goals (69.14%) were connected to two or more identities, while only a small proportion of goals (9.41%) were not connected to any identities. These results support the hypothesis that most goals are perceived to connect to multiple identities.

Table 11: Number of Goal–Identity Connections (Edges) Nominated per Goal

Connection Count	Number of Goals	Percentage of Goals (%)
0 connections	122	9.41
1 connection	278	21.45
2+ connections	896	69.14

To quantify the goal–identity integration, I used the standardized degree centrality of each goal. On average, goals were moderately integrated with the self-concept, connecting to approximately one third of the identities in each participant’s goal–identity network ($M = 0.29$, $SD = 0.21$). As shown in Table 12, the score ranged from 0 to 1, reflecting substantial variability in how strongly individual goals were connected with identities (see Figure 6 for distribution).

To examine whether this variability primarily reflected differences between individuals or differences among goals within individuals, I calculated the intraclass correlation coefficient (ICC) using a

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random-intercepts model. The ICC was 0.42, indicating that approximately 42% of the variance in goal–identity integration was attributable to between-person differences. This pattern indicates that goal–identity integration varies meaningfully both between individuals and across goals within individuals, highlighting the importance of modeling integration at multiple levels.

Finally, I characterized the overall configuration of participants' goal–identity systems using three standardized network metrics: density, centralization, and modularity. As shown in Table 12, goal–identity networks were relatively sparse. The average network density was 0.13 ($SD = 0.08$), with values ranging from 0.01 to 0.43, indicating that only a small proportion of all possible goal–identity connections were nominated. Centralization values were also low on average ($M = 0.23$, $SD = 0.10$, range = 0.05 to 0.57), suggesting that most networks were not dominated by a single highly connected node. In contrast, modularity showed greater variability across participants ($M = 0.38$, $SD = 0.21$, range = 0.05 to 0.95), indicating differences in the extent to which goal–identity systems were organized into distinct clusters.

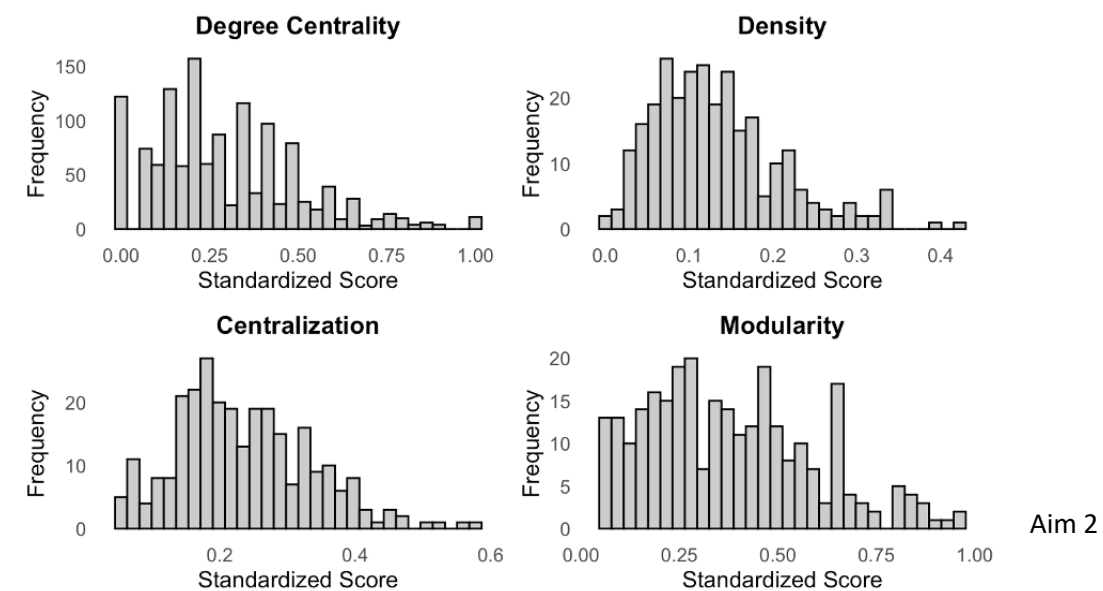
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Table 12: Descriptive Statistics for Goal–Identity Integration and Goal–Identity System Indices

Measure	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>n</i>
Goal–Identity Integration					
Degree Centrality	0.29	0.21	0.00	1.00	1296
Goal–Identity System					
Density	0.13	0.08	0.01	0.43	280
Centralization	0.23	0.10	0.05	0.57	280
Modularity	0.38	0.21	0.05	0.95	280

Note. All measures are standardized relative to each participant’s goal-identity network size.

Figure 6: Distributions of goal–identity integration and system-level network indices



To
evaluate the association between goal–identity integration and perceived goal value, I fit a multilevel model with standardized degree centrality as a fixed effect, and a random intercept and slope for goals nested within participants. Goal order was included as a covariate to adjust for potential order effects.

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As hypothesized, goal–identity integration was positively associated with perceived goal value ($\beta = 1.07$, 95% CI [0.80, 1.34], $p < .001$), indicating that goals connected to a broader set of identities were perceived as more valuable, controlling for goal order (see Table 13).

Table 13: Multilevel Model Predicting Perceived Goal Value From Goal–Identity Integration

	β	CI
Fixed Effects		
Intercept	5.44***	[5.30, 5.57]
Goal–Identity Integration (Standardized Degree Centrality)	1.07***	[0.80, 1.34]
Goal Order	-0.09***	[-0.12, -0.06]
Random Effects & Model Stats		
σ^2	0.6	
τ_{00}	0.2	
ICC	0.25	
R^2_{Marginal}	0.08	
$R^2_{\text{Conditional}}$	0.31	
Observation (N)	1296	
Group (N)	280	
Model Fit		
AIC	3301.43	
BIC	3337.6	
RMSE	0.72	

Note. P-values are adjusted for multiple comparisons using the false discovery rate (FDR) method. * indicates $p < .05$. ** indicates $p < .005$. *** indicates $p < .001$. ICC = Intraclass Correlation Coefficient. R^2_M = marginal R^2 , R^2_C = conditional R^2 .

I also explored associations between goal–identity integration and additional aspects of goal representation and goal pursuit experiences. Goal–identity integration was positively associated with perceived goal attainability, $\beta = 0.54$, 95% CI [0.24, 0.84], $p < .001$. In contrast, its association with external motivation was not significant, $\beta = 0.11$, 95% CI [-0.31, 0.53], $p = .612$. Additionally, goal–identity integration was also positively associated with several indicators of goal pursuit: effort, $\beta = 0.95$, 95% CI [0.55, 1.35], $p < .001$; commitment, $\beta = 0.92$, 95% CI [0.57, 1.27], $p < .001$; and progress

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satisfaction, $\beta = 0.49$, 95% CI [0.08, 0.89], $p = .029$. Its negative association with action crisis did not reach statistical significance after false discovery rate (FDR) correction, $\beta = -0.19$, 95% CI [-0.43, 0.04], $p = .109$. All models included goal order as a covariate and a random intercept and slope for goals nested within participants, except for the progress satisfaction model, which included only a random intercept. See Table 14 for full model details.

Table 14: Summary of Multilevel Models Predicting Goal Representation and Pursuit Outcomes From Goal–Identity Integration

Outcome	β	CI	ICC	R_M^2	R_C^2	N	Groups	AIC	BIC	RMSE
Attainability	0.54***	[0.24, 0.84]	0.26	0.03	0.28	1294	280	3,860.54	3,896.70	0.90
External Motivation	0.11	[-0.31, 0.53]	0.15	0.00	0.15	1295	280	4,644.44	4,680.60	1.28
Action Crisis	-0.19	[-0.43, 0.04]	0.28	0.01	0.29	1294	280	3,091.88	3,128.04	0.66
Effort	0.95***	[0.55, 1.35]	0.14	0.05	0.18	1293	280	4,559.54	4,595.69	1.26
Commitment	0.92***	[0.57, 1.27]	0.17	0.04	0.21	1293	280	4,095.82	4,131.97	1.03
Progress Satisfaction	0.49*	[0.08, 0.89]	0.22	0.01	0.23	1295	280	4,597.74	4,623.57	1.22

Note. All multilevel models include a random intercept and slope for goals nested within participants, and control for goal order as a covariate. P-values are adjusted for multiple comparisons using the false discovery rate (FDR) method. * indicates $p < .05$. ** indicates $p < .005$. *** indicates $p < .001$. ICC = Intraclass Correlation Coefficient. R_M^2 = marginal R^2 , R_C^2 = conditional R^2 .

Aim 3:

The third aim of this study was to examine whether the structural configuration of individuals' goal–identity systems was associated with well-being. I evaluated this using a multiple linear regression model predicting life satisfaction from three network indices: density, centralization, and modularity. The number of listed goals and identities were included as covariates to account for differences in network size.

Descriptive statistics and bivariate correlations among the three network indices are shown in Table 15. Centralization was moderately correlated with density ($r = .48$), while density and modularity

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showed a strong negative correlation ($r = -.71$). These associations suggest meaningful shared variance, particularly between density and modularity, but each index still captures a distinct aspect of structural configuration. Variance inflation factors for all predictors were below 3.6, indicating that multicollinearity was not a concern.

Table 15: Means, Standard Deviations, and Correlations Among Goal–Identity Network Metrics

Variable	<i>M</i>	<i>SD</i>	1	2
1. Density	0.13	0.08		
2. Centralization	0.23	0.10	.48** [.39, .57]	
3. Modularity	0.38	0.21	-.71** [-.76, -.64]	-.49** [-.57, -.39]

Note. Values in square brackets indicate the 95% confidence interval for each correlation.

* indicates $p < .05$. ** indicates $p < .01$.

A multiple linear regression was conducted to examine whether aspects of goal–identity network structure were associated with life satisfaction. As shown in Table 16, centralization was significantly positively associated with life satisfaction, $b = 2.23$, 95% CI [0.60, 3.86], $\beta = .19$, $sr^2 = .03$, $p < .01$. This suggests that individuals who reported higher life satisfaction tended to have a more centralized goal-identity system, in which connections were concentrated around a few key nodes.

To clarify the nature of this association and evaluate its robustness, I explored how centralization related to other network features and tested the consistency of the effect across alternative models. Centralization was weakly correlated with network size ($r = -.02$). However, it was moderately negatively correlated with goal isolation ($r = -.13$) and more strongly with identity isolation ($r = -.43$), suggesting that more centralized networks were characterized by fewer isolated elements, particularly identities (see Supplementary Table [S2.1](#) for full correlations).

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I conducted two robustness checks to evaluate whether the association between centralization and life satisfaction was influenced by extreme values. First, I ran a robust regression using M-estimation. The positive association between centralization and life satisfaction remained statistically significant, $b = 2.11$, $SE = 0.85$, $t = 2.47$. A percentile bootstrap analysis with 1,000 replicates confirmed the reliability of this effect, producing a 95% confidence interval of [0.25, 3.93]. Second, I tested a trimmed model excluding the top 1% of centralization scores. The association between centralization and life satisfaction remained positive but was attenuated and marginally non-significant, $b = 1.66$, $SE = 0.87$, $p = .058$. The attenuation of the effect after trimming the highest centralization scores suggests that the observed positive association may be primarily driven by individuals with high centralized goal-identity systems, rather than reflecting a general trend across all levels of centralization. Full results for both robustness checks are reported in the Supplementary Materials Tables [S2.2](#) and [S2.3](#).

Table 16: Associations Between Goal-Identity Network Structure and Life Satisfaction

Variable	b	b 95% CI	β	β 95% CI	sr^2	sr^2 95% CI	r	Fit
(Intercept)	4.30**	[2.93, 5.67]						
Density	-2.19	[-5.50, 1.12]	-0.15	[-0.37, 0.07]	.01	[-.01, .02]	.02	
Centralization	2.23**	[0.60, 3.86]	0.19	[0.05, 0.33]	.03	[-.01, .06]	.15*	
Modularity	-0.38	[-1.53, 0.78]	-0.07	[-0.28, 0.14]	.00	[-.01, .01]	-.08	
Number of Goals	0.10	[-0.01, 0.21]	0.12	[-0.01, 0.25]	.01	[-.01, .04]	.10	
Number of Identities	-0.03	[-0.07, 0.02]	-0.10	[-0.25, 0.06]	.01	[-.01, .02]	.01	
								$R^2 = .042^*$
								95%
								CI[.01,.08]

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Note. All network metrics were standardized against network size to ensure comparability across individuals with varying numbers of goals and identities. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. * indicates $p < .05$. ** indicates $p < .01$.

Discussion

The primary goal of this study was to evaluate the feasibility and utility of a network-based approach for representing goal–identity relations. Consistent with hypotheses, most goals were connected to multiple identities, and individuals varied in how their goals were integrated within their identity systems. At the goal level, higher goal–identity integration was associated with greater perceived value, attainability, and indicators of sustained goal pursuit, including effort, commitment, and progress satisfaction. These findings support the hypothesis that broader goal–identity integration enhances goal representation and engagement. At the individual level, centralization emerged as the only structural feature significantly associated with life satisfaction, partially supporting the hypothesis that system configuration relates to individual differences in well-being. Together, these findings provide initial evidence that a network-based framework captures nuanced variation in how goals relate to the self.

The Characteristics of the Relationships between Goals and Identities

The observed characteristics of goal–identity integration and system structure support the use of a network-based framework to describe the relationships between goals and identities. Consistent with my hypothesis, most goals were connected to multiple identities, and the configurations of goal–identity systems varied meaningfully across individuals.

These findings offer initial empirical support for the feasibility of operationalizing goal–identity relations as personalized networks. Socio-cognitive and motivational theories have long posited that

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individuals organize their goals and identities into coherent mental systems, offering a strong conceptual basis for integrating both into a single structural representation. However, no prior research has verified whether such systems can be operationalized as network structures. The present study addresses this gap by demonstrating that all participants nominated at least one goal and two identities, and 95% reported at least one goal–identity connection. In other words, participants nominated enough nodes and edges to construct idiosyncratic networks. This offers foundational evidence that a network-based representation of goal–identity systems is both theoretically grounded and empirically viable.

Beyond these structural criteria, the method also relies on a key cognitive assumption: individuals can access, reflect on, and report psychologically meaningful associations between specific goal-identity pairs. Descriptive statistics on goal–identity integration and network metrics provide preliminary support for this assumption. Meaningful variation was observed both across goals within individuals and between individuals. Additionally, participants tended to nominate different sets of identities for different goals, suggesting that they did not report these connections arbitrarily, but instead recognized distinct influences between specific goals and identities. Although task features and individual differences in cognitive ability may influence how participants respond, the present project demonstrates the feasibility of using a network-based approach to assess how individuals connect their goals and identities, and illustrates that such an approach yields meaningful data.

Beyond feasibility, the observed patterns also illustrate why a network-based approach is theoretically informative. Consistent with foundational motivational theories, most individual goals were connected to at least one aspect of the self, reflecting the drive to act in alignment with one’s identity. However, these connections did not form a dense or unified structure. Instead, participants’ goal–identity systems were sparse, decentralized, and moderately modular.

The low network density at the aggregated level highlights that although most goals were linked to the self, they connected to distinct subsets of identities. This pattern challenges traditional

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assessments that treat the self as a unitary construct and assume that goal–self alignment is broadly distributed across all aspects of identity. This pattern supports the conceptual validity of the network-based approach by revealing the need to identify *which* identities are linked to *which* goals. The patterns of centralization and modularity further support the conceptual validity of this approach. Most goal–identity systems were low in centralization, indicating that individuals did not organize their goals around a single dominant identity. Instead, goals drew on a broader range of identities in a relatively balanced way. This distribution challenges simplified models that prioritize one core identity as the primary motivational driver and underscores the value of a system-level perspective that accounts for multiple, coexisting identity influences. Additionally, moderate modularity revealed a tendency for goals and identities to cluster into partially distinct subsystems. That is, goals tended to be interconnected with a specific set of identities, but had fewer or no connections with identities outside that cluster. This pattern suggests that individuals not only compartmentalize their self-representation, but also organize their goals in alignment with these distinct identity groups. Capturing these clustered structures is critical for understanding how identity-based motivation operates within different life domains.

Together, these descriptive patterns reveal that goal–identity connections are structured, selective, and domain-specific, underscoring the value of a network-based approach for capturing the complexity of how individuals relate their goals to the self-concept.

Goal–Identity Interaction in Relation to Goal Representation and Striving Behaviors

The second aim of this project was to examine the associations between goal–identity integration and both goal representation and goal pursuit experiences. Findings from multilevel modeling supported the hypothesis that goal–identity integration, operationalized as the standardized degree centrality of goals in a goal–identity network, was positively associated with perceived goal value. Additional multilevel modeling revealed that goal–identity integration was also associated with

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perceived attainability, effort, commitment and progress satisfaction. These findings suggest that goals connected to a broader range of an individual's identities are associated with higher perceived value and stronger motivation to pursue them.

The present study introduces a novel operationalization of the relationship between a goal and the self by quantifying the proportion of a person's identities that connect to a given goal using a network-based approach. This method acknowledges the complexity of self-concept representation and captures how broadly a goal is integrated across distinct facets of the self. In doing so, it emphasizes the breadth of goal–identity integration, a distinct and previously overlooked dimension of self-relevance. Whereas prior work has primarily focused on the strength of alignment, this approach offers a more fine-grained account of how self-relevance can vary across an individual's goals.

As a novel construct, goal–identity integration requires further validation to establish its conceptual and empirical utility. Examining its association with perceived goal value provides an important initial step, given that alignment with the self is a well-established contributor to goal valuation. Although goal–identity integration captures a distinct aspect of the goal–self relationship, it demonstrates the expected positive association with perceived value. This convergence offers initial support for its validity and suggests that the construct reflects self-relevant dimensions of goal representation.

Having established initial support for the validity of goal–identity integration as a meaningful construct, the next step is to consider how it offers a new perspective on how the self shapes goal pursuit. The observed associations between goal–identity integration and both perceived value and attainability are consistent with prior research suggesting that the self serves as a motivator by shaping goal representation. Specifically, the identity-value model and identity-based motivation theory emphasize the influence of specific identities on goal representation. Both frameworks highlight the contextual nature of identity effects, proposing that identity contributes to motivation primarily when it

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is salient in a given context. In contrast, goal–identity integration offers a cross-contextual perspective: it captures how broadly a goal is embedded within an individual’s self-concept system, regardless of the situational salience of any single identity. From this perspective, one possible mechanism underlying the associations with value and attainability is that when a goal is integrated with multiple identities, it is more likely to remain self-relevant across diverse situations. This consistent self-relevance may help sustain a sense of value and attainability over time, even in the absence of a single identity being momentarily salient. The broader the integration across distinct aspects of the self-concept, the more stable the relationship between the goal and the self becomes, providing a motivational baseline by increasing the likelihood that at least one connected identity will become salient in a given context.

Beyond goal representation, goal–identity integration was also associated with greater commitment, more effort, and higher satisfaction with progress, suggesting that broader integration may support sustained engagement over time. These findings may reflect behavioral changes resulting from enhanced perceived value. Alternatively, the associations could reflect a reverse causal pathway, in which individuals retrospectively perceive a goal as more integrated with their identities after having invested considerable effort in it (Bem, 1972). Although the present cross-sectional study cannot disentangle these mechanisms, the observed associations between goal–identity integration and goal pursuit experiences suggest that integration may not only shape how people pursue their goals but may also evolve as a function of their engagement, progress, and experiences along the way. This perspective aligns with dynamic models of self-regulation, which emphasize that goals and identities are co-constructed and continuously updated through ongoing pursuit and reflection (Fishbach et al., 2009).

Notably, goal–identity integration was not significantly associated with external motivation or action crisis. While individuals may be motivated to strive for goals that are integrated with a broad set of identities, goal–identity integration does not necessarily indicate that the goal is free from external pressures or internal conflict. The present study does not provide sufficient information to fully explain

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these null results, but a few possibilities can be considered. It is possible that identity integration and external motivation operate through distinct motivational pathways. Individuals may still be motivated by external factors to pursue a goal that are broadly integrated with their identities. This interpretation aligns with perspectives suggesting that intrinsic and extrinsic motivation are independent, such that individuals may be highly motivated by both types of motivation at the same time (Amabile et al., 1994; Harter, 1981; Lepper et al., 1997). Another unexpected finding concerned action crisis. Prior research has shown that lower perceived attainability predicts subsequent experiences of action crisis (Ghassemi et al., 2017). Given that goal–identity integration was positively associated with perceived attainability, one might expect it to be negatively associated with an action crisis. The absence of this pattern suggests that elevated attainability alone may not be sufficient to buffer against motivational conflict. Other factors may play a role in triggering action crises, such as setbacks and goal conflict.

This network-based method provides additional insights into goal-self relations that would not be accessible with existing approaches. First, it introduces a new facet of self-alignment by quantifying the breadth of a goal's connections to the self, capturing not only the strength of alignment but also the diversity of identities with which a goal is integrated. This broader operationalization moves beyond treating self-alignment as a single dimension and instead specifies how a given goal aligns with multiple, and potentially diverse, aspects of identity. Second, this perspective allows researchers to investigate how goal–self relations may remain stable or shift across contexts in which different identities become more or less salient. Finally, by mapping connections between specific goals and specific identities, this method enables exploration of how attributes of one part of the system, for example, a goal's advancement or an identity's malleability, affect the representation and pursuit of the other.

Together, these findings highlight goal–identity integration as a novel construct that extends the understanding of goal–identity relations by capturing the breadth of connection across multiple

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identities. By demonstrating consistent associations with both goal representation and aspects of goal pursuit, the results suggest that integration with multiple identities may provide a stable motivational foundation across contexts.

Associations between Goal-Identity Systems and Well-being

The third aim of this study was to examine whether the structural properties of individuals' goal–identity systems were associated with well-being. Among the three network metrics included in the multiple linear model, only centralization was significantly associated with life satisfaction after controlling for network size. In contrast, density and modularity did not show significant associations.

These findings offer preliminary evidence that the structural configuration of one's goal–identity system accounts for individual differences in well-being. Unlike prior research that averages the strength of alignment between individual goals and a generalized self-concept, this study introduces a network-based framework that captures how multiple goals and multiple identities are organized as a system. By quantifying structural features of this system, the framework offers new insights into how individuals mentally organize goal–identity relations beyond aggregating alignment strength across goals into a uniform index. Specifically, the results highlight centralization as a novel dimension of variance that characterizes the distribution of connections in the system, representing how evenly goals and identities are connected. While centralization was moderately correlated with density, it captures a qualitatively distinct structural feature, differentiating systems in which connections are concentrated around a few salient goals or identities from those in which connections are spread across many nodes with no clear focal points.

To better understand the observed associations, it is important to first clarify what centralization represents in the context of goal–identity systems. The psychological interpretation of a given centralization score can vary depending on the underlying structure of the network. A moderately

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centralized network may take several forms: it could reflect a few goals that are disproportionately connected to many different identities, a few salient identities that connect a wide range of goals, or a system with fewer isolated identities. Regardless of the specific configuration, centralization may signal more coherent relations between goals and identities, characterized by less compartmentalization across separate life domains.

Because different underlying configurations may reflect distinct mental representations, the associations between the centralization of goal-identity systems and life satisfaction permits multiple plausible interpretations. Here, I outline three potential scenarios that may help illuminate the underlying psychological mechanisms. One plausible interpretation is that a moderately centralized goal–identity network, where many goals are anchored to a small set of core identities, reflects greater self-concept clarity. This configuration may indicate a coherent and stable self-structure in which a few salient identities consistently guide goal settings and pursuit. According to self-concept clarity theory, individuals with clearly defined and internally consistent self-views experience greater well-being (Campbell et al., 1996; Bigler et al., 2001). When goals align with a stable core sense of self, self-regulation may feel more directed and meaningful, promoting life satisfaction (Vess, 2018). This interpretation is further supported by exploratory findings showing a positive association between centralization and self-concept clarity in this sample. A second plausible interpretation centers on the degree of identity fragmentation within the system. In this study, lower centralization was moderately associated with a greater number of identities that were not connected to any goals. This configuration may reflect a form of identity suppression or disengagement, in which certain aspects of the self are not actively expressed through goal pursuit. When individuals are unable to integrate important identities into their daily pursuits, they may experience internal conflict, inauthenticity, and diminished psychological well-being (Diehl & Hay, 2011; Vignoles et al., 2006). A third plausible interpretation is that a moderately centralized goal–identity system reflects a structure in which a few superordinate goals

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are meaningfully integrated with diverse aspects of the self. Compared to more decentralized systems where goals align one-to-one with distinct identities, centralized configurations may represent a regulatory process anchored in core goals that resonate broadly across identity domains. This structure may reduce internal conflict and simplify decision-making by aligning multiple facets of the self toward a shared direction. As a result, individuals may experience greater purpose and self-concordance, both of which are associated with higher life satisfaction (McGregor & Little, 1998; Sheldon & Houser-Marko, 2001; King & Hicks, 2009).

These results and plausible interpretations suggest that moderately centralized goal-identity systems may offer psychological benefits by empowering core self-concept or reducing internal conflict. However, the strength and generalizability of this association must be qualified by its small effect and sensitivity to extreme values. The positive association may be driven primarily by individuals with highly centralized goal-identity systems, rather than reflecting a general trend across the full distribution. Future studies should consider generating separate centralization metrics to disentangle identity-anchored versus goal-anchored configurations and replicate findings across diverse samples with full-range centralization scores to evaluate robustness and generalizability.

Using a network-based structure to represent goal-identity systems introduces new dimensions for describing how multiple goals connect with multiple identities. While these dimensions of structural variance may not be robustly associated with general indicators of well-being, such as life satisfaction, they may be more relevant to individual differences in behavior and affective responses within specific goal pursuit contexts. For instance, centralized or fragmented configurations may shape how individuals respond to identity threat, manage goal conflict across domains, or navigate decisions about goal prioritization and disengagement. Beyond summary metrics, the goal-identity system itself may also offer applied value by highlighting personalized intervention targets, such as goals that are isolated from all identities or those linked exclusively to an identity that may be vulnerable to threat.

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Although structural configuration showed limited associations with well-being, the findings underscore the value of network-based approaches for capturing individual differences in how people mentally organize their goals and identities, opening new directions for theories, and applied intervention.

Limitations

The nomination task may have biased participants toward reporting mutual influence between goals and identities. Participants were first asked to nominate goal–identity pairs based on any form of influence, whether a goal shaped an identity, an identity shaped a goal, or both. On the subsequent strength rating task, they rated each direction of influence separately. Because some participants may be reluctant to select extreme values, they may have provided nonzero ratings in both directions by default. This response pattern could inflate the number of goal–identity pairs rated as having bidirectional influence. Therefore, I adopted a more conservative analytic approach by focusing on non-directional degree centrality to mitigate this potential issue, even though the task was designed to capture the directionality of goal–identity influence.. This metric reflects the overall breadth of integration with identities for each goal while minimizing assumptions about causality or directionality in any goal–identity relation.

A second limitation concerns the sparsity and structural constraints of the goal–identity networks generated in the study. While the upper limit for nominating goals and identities improved task feasibility, it resulted in relatively small, idiosyncratic networks that constrained the range and variance of system-level configuration metrics. Additionally, the network structure captured only bipartite goal–identity connections and excluded connections among goals or among identities, further limiting structural complexity. The moderate to high skewness observed in density and centralization further increases the risk of misinterpreting associations. These constrained distributions may reflect

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individuals' natural tendency to perceive most of their goals as connected to only a subset of identities. Alternatively, the restricted range may result from response fatigue or limitations in cognitive load. Regardless of the underlying causes, this limited variability in configuration reduces the power of these metrics to explain between-person differences in downstream outcomes and increases the likelihood that any observed associations are disproportionately driven by a small number of outliers. To assess the impact of these restricted distributions, I conducted sensitivity analyses to evaluate the robustness of observed associations and to identify whether any effects were driven by individual cases with extreme network properties. Future studies should aim to include more diverse and larger samples to improve statistical power.

A third limitation concerns the difficulty of interpreting whether differences in network configuration metrics reflect psychologically relevant variation in how people represent the relationship between their goals and identities. One core challenge lies in the ambiguity of what counts as a connection. When participants were asked to nominate and rate goal–identity pairs, the phrasing allowed for multiple interpretations. For example, when a goal is said to “shape” an identity, participants might interpret this as the goal expressing an existing identity or as helping them move closer to becoming that identity. Similarly, when an identity is said to “shape” a goal, this could mean that the identity motivates goal selection or that the identity makes goal pursuit more feasible. These divergent interpretations introduce some uncertainty about which aspects of goal–identity relations a nominated connection actually reflects. However, we can infer at least that there is some kind of perceived connection between the goal and the identity. A second issue arises from the nature of configuration metrics. Indices like centralization or modularity can assign the same value to networks that differ in how goals and identities are organized, obscuring important differences in structure. For instance, two individuals with the same centralization score might differ in whether their networks are dominated by highly integrated goals or by salient identities. Likewise, the presence of distinct modules

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could reflect compartmentalization in mental representation by life domain (e.g., work vs. relationships), or could result from superficial fragmentation due to random variation in the nomination process. A related concern is the relatively small size of the networks in this study, which typically included around 10 to 20 nodes and only a handful of edges. Many common indices, such as density, centralization, and modularity, were developed and validated in larger networks with hundreds or thousands (or hundreds of thousands!) of nodes. Their mathematical properties may not operate in the same way in small networks, and values that appear comparable across participants may, in fact, reflect different structural realities. For example, a centralization score derived from a network with three highly connected nodes may not be psychologically equivalent to the same score in a large-scale network dominated by a single hub. This raises concerns about how well these metrics capture meaningful variation in small associative networks.

To establish the interpretability and construct validity of these configuration metrics, future studies should examine their convergent and discriminant validity by comparing them to other self-reported metacognitive assessments. It is also important to confirm that similar values reflect similar internal representations. Visualizations of network structure can serve as a useful tool to inspect and validate abstract configuration properties. Taken together, researchers should evaluate the psychometric properties of these metrics before using them to assess individual differences.

Introducing a novel operationalization of goal–identity integration inevitably comes with challenges. As with any new measurement approach, the interpretability, validity, and generalizability of the proposed network metrics must be rigorously evaluated. These limitations highlight the importance of continued refinement, validation, and replication before using these structural indices to draw substantive conclusions.

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Future Direction

One advantage of using a network approach is that it specifies which identities are connected to each goal, allowing researchers to examine how features of specific goals or identities moderate the associations between goal–identity integration and goal representation or pursuit. These features may include the perceived malleability, desirability, or stability of each identity. Because the self-concept can be conceptualized as a network of interconnected identities, it may also be informative to test whether an identity’s centrality within this network moderates the extent to which its connection to a goal shapes the goal’s perceived value or attainability. Similarly, goals may form interdependent networks in which some goals facilitate or compete with others. The position of a focal goal within such a network, may also moderate the effects of identity integration on goal pursuit.

A second direction for future research involves using longitudinal and experimental designs to explore the causal relationship between goal–identity integration and goal representation or pursuit experiences. For example, longitudinal studies can establish temporal precedence (even if not full causation) by tracking changes in effort, satisfaction with progress, and action crisis to assess whether pursuing goals that are more broadly integrated with one’s identities leads to more adaptive and sustained goal engagement. These designs can also examine whether progress, or lack of progress, on more identity-integrated goals has a stronger influence on subsequent self-evaluation, including self-efficacy, self-esteem, and perceived coherence or clarity of the self-concept. In addition to tracking natural variation, experimental studies can manipulate the breadth of goal–identity integration to evaluate its causal effects on goal representation. For instance, participants could be randomly assigned to reflect on how a goal connects to either a single identity or multiple identities, allowing researchers to test whether increasing the number of connected identities enhances perceived goal value or attainability. Alternatively, a multi-session design could gradually build integration by prompting

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participants to connect the same goal to different identities across time, enabling researchers to examine whether cumulative increases in integration strengthen motivation. Together, longitudinal and experimental approaches are essential for identifying the psychological mechanisms through which goal–identity integration shapes goal pursuit.

A third direction for future research involves leveraging the network structure to investigate how goal-identity relations buffer against the negative impacts of identity threat or setbacks in goal progress. For example, when a salient identity is threatened, individuals may lose motivation for goals that are strongly connected to that identity due to a reduction in perceived value or self-relevance. However, those with more interconnected networks may be more resilient to such threats because alternative identity connections can continue to sustain goal pursuit. Relatedly, researchers can examine whether setbacks in one goal reduce motivation or perceived attainability for other goals connected to the same identity. This spillover effect may occur because failure in one goal undermines how individuals perceive the associated identity, thereby weakening that identity’s contribution to the perceived value of other connected goals.

Beyond its theoretical contributions, the network-based framework also holds promise for applied use in goal-related interventions. Mapping individuals’ goal–identity systems may facilitate personalized interventions by identifying vulnerable goals that lack identity connections or rely heavily on a single identity that is peripheral or under threat. The process of constructing this network may itself reinforce motivation by making the self-relevance of goals more salient. Additionally, visualizing the structure of one’s goal–identity system may be a useful tool for managing multiple goals. For example, network diagrams could help individuals prioritize goals that are highly integrated within their identity system or support strategic disengagement from goals that are weakly connected or isolated. By making the structure of the goal–identity system explicit, this approach can support more personalized, reflective, and adaptive goal pursuit.

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In summary, this second project introduces and validates a novel network-based framework for examining how individuals mentally organize the relationships between their goals and identities. This approach acknowledges that individuals pursue multiple goals simultaneously and moves beyond previous assessments of goal–self alignment by operationalizing the self-concept as a set of distinct identities. Descriptive findings support that goals vary in the number of identities they connect with, and individuals tend to perceive different goals as connected to different subsets of identities. At the goal level, broader goal–identity integration was associated with higher perceived goal value and attainability. At the individual level, centralization of the goal–identity system emerged as a promising structural feature explaining individual differences in life satisfaction. Taken together, this study offers a new lens for understanding how goals are integrated within the self and lays the groundwork for future research examining the dynamic, contextual, and regulatory functions of goal–identity systems.

CHAPTER IV: EFFECTIVE GOAL REFLECTION STRATEGIES TO ENHANCE WELL-BEING

Introduction

The Reciprocal Role of Subjective Well-Being in Goal Pursuit

A common belief behind many people's goals is that happiness naturally follows achievement. This belief frames well-being as a delayed reward that will arrive once one reaches the finish line. As a result, individuals often accept stress, frustration, and exhaustion as necessary trade-offs for future fulfillment. This narrative not only justifies emotional distress during pursuit but also undermines efforts to improve well-being along the way. If happiness lies solely at the endpoint, there seems little reason to target it during the goal pursuit process. However, empirical evidence challenges this assumption. Goal attainment does not consistently lead to higher life satisfaction or quality of life (Thorsteinsson & Vittersø, 2018; Wiese & Freund, 2005). People often adapt quickly to their achievements and continue to chase the next milestone without lasting gains in happiness (Diener et al., 2006). In some cases, persistent striving may even lower well-being, particularly when individuals pursue goals that are misaligned with their values or become unattainable (Wrosch et al., 2003). Focusing solely on performance and attainment overlooks how individuals feel during the pursuit, missing a powerful lever for promoting sustained motivation and well-being.

Subjective well-being is a psychological construct that encompasses, but extends beyond, the pursuit of happiness. It refers to how and why people experience their lives in positive ways (Diener, 1984). Subjective well-being focuses on hedonic experience and includes three key components: the presence of positive affect, the absence of negative affect, and cognitive evaluations of life satisfaction (Lucas et al., 1996). Subjective well-being is especially relevant to goal pursuit because it is highly dynamic and responsive to both the experiences and outcomes of goal striving. Moreover, as a

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subjective construct, it depends not only on objective progress or performance, but also on how individuals represent and evaluate their goals and experiences along the way (Klug & Maier, 2015; Nilsson et al., 2022).

A wide range of factors within the goal pursuit process shape subjective well-being. Goal achievement often brings positive affect and a sense of satisfaction, but emotional rewards also emerge during the process itself. Intermediate progress can also enhance well-being, whether reflected in objective milestones or shaped by individuals' subjective interpretations of how they are doing (Klug & Maier, 2015; Sirgy, 2021; Wiese & Freund, 2005). However, not all progress contributes equally. Individuals tend to report greater increases in well-being when they make progress toward goals that are pursued for autonomous reasons, such as personal interest or alignment with core values than when pursuing goals driven by external pressure or obligation (Sheldon et al., 2004; Sheldon & Cooper, 2008). Beyond outcomes, the process of striving itself can support well-being when activities are intrinsically enjoyable or when the pursuit fosters a sense of purpose and agency (reference). At the same time, goal pursuit can be psychologically costly, and negative experiences are, in fact, common (Dietrich et al., 2013). Setbacks and negative feedback often trigger declines in subjective well-being, particularly when individuals struggle with personally important goals (Street, 2002). These moments can evoke frustration, rumination, and self-doubt (Moberly & Watkins, 2010). Even in the absence of overt failure, prolonged stagnation or a lack of motivation can be equally distressing. When progress stalls, individuals may experience internal conflict about whether to persist or disengage, which often leads to negative affect and increased perceived stress (Brandstätter et al., 2013a; Holding et al., 2021). These dynamics highlight that subjective well-being is a core aspect of the goal pursuit experience and deserves close attention in both research and intervention contexts.

Subjective well-being is not just byproducts of goal pursuit. The relationship is bidirectional because well-being also shapes how individuals interpret their goals, regulate their motivation, and

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adapt their behavior throughout the pursuit process. Affective states serve as internal cues during goal pursuit, prompting individuals to re-evaluate their goals or adjust their behaviors. Positive affect may signal that a goal is attainable under current conditions, encouraging individuals to sustain effort and take advantage of available opportunities (Avnet et al., 2013). In some cases, it may also indicate that progress on the focal goal is exceeding expectations, prompting individuals to shift attention toward other goals (Louro et al., 2007; Thürmer et al., 2020). Negative affect can also guide goal regulation, though its effects are more mixed. Negative affect triggered by perceived discrepancies between current and desired states can enhance motivation by making those discrepancies more salient and prompt individuals to adjust their efforts or strategies to reduce the gap (Miele & Scholer, 2018). Yet negative affect does not always result in greater effort or adjustment in strategies. Feelings of frustration or hopelessness may suggest that a goal is no longer attainable, while experiences of apathy, low vitality, or emotional detachment may indicate that a goal lacks personal meaning or value (Pekrun, 2006). These affective signals can undermine motivation and eventually lead to disengagement, especially when the emotional cost of continued pursuit outweighs perceived benefits. Beyond momentary affective signals, individuals' overall subjective well-being also plays a broader role in shaping goal pursuit. People with higher levels of subjective well-being tend to select goals that are more self-congruent, persist longer in the face of setbacks, and recover more quickly from failures (Sheldon & Houser-Marko, 2001; Haase et al., 2021). They are also more likely to engage in proactive coping, maintain optimism, and regulate their behavior flexibly in response to changing circumstances. In this way, subjective well-being not only reflects the quality of current goal pursuit, but also serves as a psychological resource that supports more adaptive regulation over time.

Subjective well-being is both an essential outcome of goal pursuit and a key lever that shapes how individuals perceive and engage with their goals. These reciprocal dynamics highlight the need for

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goal-related interventions to move beyond performance-based metrics and to consider well-being as a critical target and mechanism for supporting long-term goal pursuit.

Limitations of Attainment-Focused Goal Interventions

Despite growing recognition of subjective well-being as a critical outcome and driver of goal pursuit, most existing interventions remain narrowly focused on performance-related outcomes. Few approaches explicitly target the psychological mechanisms that promote well-being during goal pursuit, leaving a significant gap in the development of strategies that support sustained engagement and foster positive emotional experiences along the way. As a result, interventions may succeed in promoting short-term behavior change but fail to support long-term engagement or emotional resilience. Moreover, when an intervention compromises immediate subjective well-being, individuals may disengage from the strategy prematurely, even if it could support goal attainment in the long run.

Among the most widely used strategies for supporting goal pursuit are those that focus on forming and priming action plans. One particularly well-established approach is mental contrasting with implementation intentions (MCII), a strategy designed to enhance goal attainment by strengthening commitment and facilitating follow-through (Oettingen & Gollwitzer, 2010). Mental contrasting prompts individuals to first imagine a desirable future and then reflect on the obstacles in their present reality that may impede its realization. This process helps individuals align their level of commitment with their expectations of success, which in turn strengthens motivation when feasibility is high (Oettingen & Gollwitzer, 2010). Once a strong goal commitment is formed, individuals are encouraged to create implementation intentions: “if...then...” plans that link anticipated barriers or opportunities with immediate, goal-directed responses. These plans work by heightening the accessibility of situational cues and automating behavioral responses, allowing individuals to act efficiently and consistently without needing to deliberate in the moment (Gollwitzer & Sheeran, 2006; Webb & Sheeran, 2008).

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Together, these strategies are widely used and effective in promoting behavioral change and goal progress across a range of domains.

Despite their demonstrated effectiveness in promoting behavioral outcomes, the affective consequences of these strategies have received comparatively little attention, and the available evidence is mixed. Some studies have reported increases in positive affect following mental contrasting with implementation intention (Dreisoerner et al., 2024), while others show null or even negative outcomes, particularly under conditions of low progress or high personal pressure (Mcewan et al., 2015; Ntoumanis et al., 2021). This variability suggests that such strategies may be beneficial in some contexts while posing risks for well-being in others. Strategies like mental contrasting and progress monitoring rely on making discrepancies between current and desired states highly salient. This can motivate adaptive action in some cases, yet, it may also backfire by inducing rumination, frustration, or diminished mood (Goldsmith, 2023; Langens, 2002). Individuals high in perfectionism or fear of failure may respond poorly to these techniques, as they often intensely focus on what remains undone (Powers et al., 2005). Emerging research also suggests that the emotional impact of goal-performance discrepancies may depend on how individuals temporally frame these gaps (Wong et al., 2022), or whether they interpret them as threats to self-worth or signs of challenge (Scholer et al., 2024). These findings highlight the need to move beyond the assumption that promoting goal progress necessarily improves well-being. Instead, more research should directly examine the immediate impacts of attainment-focused interventions on subjective well-being.

Two Guided Reflection Strategies for Enhancing Subjective Well-Being During Goal Pursuit

Subjective well-being, by definition, reflects how individuals interpret and evaluate their own experiences. Accordingly, interventions that aim to enhance subjective well-being should focus on the ways individuals perceive and relate to those experiences. Guided reflection offers a promising avenue

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for this purpose. It refers to the use of structured prompts or questions to help individuals examine their actions, thoughts, and feelings in a deliberate and focused manner, ultimately leading to greater insight and more adaptive reinterpretations of their experiences (McRae et al., 2012). Because it centers on subjective meaning and can be flexibly adapted to different goals and contexts, guided reflection is particularly well suited for supporting well-being during goal pursuit. First, reflection can incorporate a wide range of content, including past experiences, present challenges, and future aspirations. This breadth allows individuals to engage with different aspects of their goal pursuit experience. Second, reflection is highly feasible: it can be delivered through simple prompts, requires minimal training or instruction, and lends itself well to short, self-guided interventions. Finally, reflection is inherently personalized. Rather than applying a one-size-fits-all framework, it invites individuals to bring their own values, beliefs, and past experiences into focus, increasing the likelihood that the process feels meaningful and emotionally resonant.

Reflection-based strategies have been widely used in cognitive and behavioral interventions to promote emotional regulation and well-being, often through techniques such as reappraisal, self-affirmation, expressive writing, and mindfulness-based emotional regulation (Baikie & Wilhelm, 2005; G. L. Cohen & Sherman, 2014; Gangestad & Snyder, 2000). Few studies have adapted guided reflection to improve well-being specifically in the context of goal pursuit (Ekhtiar et al., 2022). To address this gap, the present project introduces and evaluates two distinct forms of guided reflection: one that emphasizes goal attainment, and another that emphasizes goal value. These strategies offer a useful contrast for examining how reflective processes can shape subjective well-being during ongoing goal striving.

The attainment-focused reflection strategy adapts widely used behavioral and cognitive techniques designed to support goal progress, including mental contrasting, implementation intentions, and progress monitoring. These strategies are well-suited to guided reflection because they involve

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cognitive processes that can be prompted through structured writing, such as planning steps, analyzing obstacles, and envisioning desired outcomes. Beyond facilitating goal-directed action, attainment-focused reflection may enhance subjective well-being through several distinct pathways. For example, it can help individuals gain greater clarity and perceived control over their goal pursuit progress by breaking down goals into manageable steps and identifying concrete next moves (Knäuper et al., 2011). This structured planning may reduce uncertainty and thereby reduce negative affect and stress (Maglio et al., 2014; Robinson et al., 2019). Second, by making the goal pursuit process feel more manageable, this reflection strategy may increase the perceived attainability of the goal, which in turn is associated with greater positive affect and sustained motivation (H. Wang et al., 2022). Finally, attainment-focused prompts may facilitate cognitive reappraisal, encouraging individuals to interpret setbacks as temporary and solvable rather than as personal failures. This reinterpretation supports subjective well-being by mitigating rumination and fostering emotional resilience (Nolen-Hoeksema et al., 2008). These mechanisms are not intended to be comprehensive, but they highlight the potential benefits of attainment-focused reflection for supporting subjective well-being. At the same time, as noted earlier, this strategy may also increase negative affect by directing attention to obstacles, unmet standards, and setbacks. Despite their popularity, the affective outcomes of attainment-focused strategies remain poorly understood, making them an important focus for empirical evaluation.

Value-focused reflection is another promising strategy for enhancing individuals' subjective well-being during goal pursuit. This strategy guides individuals to consider why their goals matter to them, encouraging them to explore how their goals align with personal values, reflect core aspects of identity, and contribute to the person they want to become. This approach draws on principles from self-concordance theory (Sheldon & Elliot, 1999) and self-determination theory (Deci & Ryan, 2000), which emphasize the importance of autonomous motivation for well-being and sustained goal pursuit. Autonomous motivation refers to pursuing goals because of personal interest, enjoyment, or alignment

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with one's values, rather than in response to external pressures or obligations. Concepts such as value, motivation, and identity are often abstract and difficult to access spontaneously. Guided reflection can facilitate greater self-awareness and insight into these dimensions by providing structured prompts that help individuals connect their goals to broader self-views (Schultz & Ryan, 2015). According to self-determination theory, one key pathway through which reflecting on values can promote well-being is by satisfying the need for autonomy (Vansteenkiste et al., 2020). By prompting individuals to reflect on the personal significance of their goals, value-focused reflection may reinforce a sense of volition and authenticity, which subsequently enhance well-being. The role of autonomy need satisfaction, as well as other basic psychological needs, is discussed in more detail in the following section. In addition to autonomy support, by articulating how goals reflect their core values and personal ideals, individuals may gain greater clarity about who they are and what they stand for. This enhanced self-concept clarity has been linked to increased life satisfaction (Coutts et al., 2023; Ritchie et al., 2011; Xiang et al., 2023). Finally, value-focused reflection may enhance autonomous motivation by encouraging individuals to consider how their goals align with their personal values and sense of self. Given that autonomous motivation has been shown to buffer negative affect during goal pursuit (Gillet et al., 2013; Ntoumanis et al., 2014), this strategy could help individuals maintain subjective well-being even in the face of slow progress or setbacks. Despite its strong theoretical foundation, most existing research on the benefits of reinforcing goal value is observational or focuses primarily on motivational outcomes, such as commitment and persistence (Acee, 2023; Ntoumanis et al., 2021). As a result, relatively little is known about how value-focused reflection influences individuals' emotional experiences during goal pursuit.

These two reflection strategies offer conceptually distinct yet complementary approaches to supporting subjective well-being during goal pursuit. Attainment-focused strategy prompts individuals to reflect on *how* to pursue their goals, emphasizing planning, obstacle anticipation, and problem-solving to prepare them for taking action. In contrast, value-focused strategy prompts individuals to

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reflect on *why* their goals matter, encouraging them to draw connections between their goals, personal values, and identity, thereby shaping how they mentally represent their goals. Examining their short-term effects on subjective well-being is critical for advancing intervention design and understanding the psychological processes that underlie adaptive goal striving.

Basic Psychological Needs as a Shared Mechanism for Supporting Subjective Well-Being

Attainment- and value-focused reflection strategies, despite their conceptual differences, may both influence well-being by shaping how individuals experience their goals. One theoretical framework that explains how such experiences shaping well-being is the basic psychological need theory, a mini-theory within the SDT framework (Ryan & Deci, 2000; Vansteenkiste et al., 2020). The theory proposes that subjective well-being is supported when three basic psychological needs are fulfilled: autonomy, competence, and relatedness. In the context of goal pursuit, the need for autonomy is satisfied when individuals experience their goals as self-endorsed and personally meaningful; competence is fulfilled when they feel effective in making progress and managing obstacles; and relatedness is met when they feel supported, understood, or connected to others through their goals or the pursuit process. When these needs are fulfilled, individuals are more likely to experience higher life satisfaction, increased positive affect, and reduced negative affect (Ryan & Deci, 2001; Van Den Broeck et al., 2016).

The extent to which these needs are fulfilled depends, in part, on the nature of individuals' goals and how they mentally represent them. Within the SDT framework, motivational theories highlight that both the content of a goal and the reasons for pursuing it influence its capacity to support psychological need satisfaction. Goal content theory focuses on what individuals pursue, suggesting that intrinsic goals, such as fostering community, nurturing close relationships, and personal growth, are more strongly linked to well-being than extrinsic goals, such as financial success and appearance (Vansteenkiste et al., 2006). In contrast, self-concordance theory emphasizes why individuals pursue

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goals, proposing that any goal can support well-being if it is pursued for autonomous, personally meaningful reasons and aligns with one's identity and values (Sheldon & Elliot, 1999). Whether through content or motivation, these frameworks converge on the idea that subjective well-being depends not just on goal attainment, but on whether the process of striving supports the fulfillment of basic psychological needs.

A substantial body of research has demonstrated robust associations between basic psychological need satisfaction and well-being across life domains (Van Den Broeck et al., 2016), cultures (Chen et al., 2015) and the lifespan (Tang et al., 2020). In particular, studies have shown that need satisfaction mediates the relationship between self-concordant goal pursuit, autonomous motivation, and subjective well-being (Hope et al., 2019; Litalien et al., 2013; Sezer et al., 2024). At the within-person level, studies show that when individuals report more autonomous goal regulation, they also experience greater need satisfaction, which in turn predicts enhanced subjective well-being (R. Campbell et al., 2018; Neubauer et al., 2021). Additionally, day-to-day fluctuations in psychological need support are closely tied to fluctuations in well-being (Patall et al., 2018; Van der Kaap-Deeder et al., 2017; Vansteenkiste et al., 2020), suggesting that basic psychological need satisfaction is dynamic and responsive to situational change. These findings highlight its potential as a viable target for short-term, momentary interventions.

A growing number of behavior change interventions have leveraged basic psychological need support to promote behavior change and goal pursuit. Meta-analytic evidence supports their effectiveness, particularly in domains such as health (Gillison et al., 2019; Sheeran et al., 2021) and education (Su & Reeve, 2011; Y. Wang et al., 2024). However, most interventions only evaluate motivational and behavioral outcomes and few assess psychological outcomes, including subjective well-being. Among the subset of randomized controlled trials that do, the evidence remains mixed. For example, one meta-analysis found small positive effects of autonomy support on well-being but

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inconsistent effects for competence support (Ntoumanis et al., 2021). Moreover, many interventions that support basic psychological needs lack scalability and feasibility, as they are typically delivered in-person over multiple sessions. Unlike strategies that target competence which have been more readily adapted to self-guided online formats, brief and scalable interventions that foster autonomy remain relatively scarce (G. Wang et al., 2021). A few studies have tested self-administered, scalable techniques like value reappraisal and high-level construal to support needs for autonomy, but their effects on subjective well-being remain largely understudied (Acee, 2023; Davis et al., 2016).

Subjective well-being is a critical component of both quality of life and sustained goal pursuit, yet it remains an underexamined outcome in self-regulation and behavior change research. Strategies like attainment- and value-focused reflection have shown promise for promoting motivation and goal-directed behaviors. They are also grounded in psychological frameworks that highlight potential pathways for enhancing subjective well-being, such as basic psychological need satisfaction. However, empirical evidence remains limited on whether these strategies directly influence individuals' subjective well-being, beyond their effects on goal progress. Evaluating the effects of these approaches on subjective well-being is essential for advancing understanding of the motivational and affective processes that shape goal pursuit, and for informing the development of scalable interventions that support both performance and psychological well-being.

Study Aims

My third project aims to identify goal reflection strategies that enhance subjective well-being through an online experiment with single-session interventions. To better understand how to increase positive affect and reduce negative affect during goal pursuit, this study includes two conceptually distinct reflection strategies: an attainment-focused strategy (*how*) that adapts commonly used behavioral techniques that support goal-directed action; and a value-focused strategy (*why*) that

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encourages individuals to explore how their goals align with personal values and identities. These two strategies differ in their focus and in the potential psychological pathways through which they may influence well-being. One possibility is that the attainment-focused strategy enhances well-being by supporting the need for competence, helping individuals feel more effective and capable in managing their goals. In contrast, the value-focused strategy may enhance well-being by supporting the need for autonomy, reinforcing a sense of volition, authenticity, and personal significance in goal pursuit.

While I expect the effect sizes of single-session reflection interventions to be small, this project provides an important first step in evaluating how different goal reflection strategies influence individuals' momentary emotional experiences during goal pursuit—an outcome often overlooked in behavior change research. Moreover, by testing psychological need satisfaction as a potential mediating mechanism, it offers insight into why certain reflection strategies may be more effective than others. Although small in scale, these findings have broad implications for designing flexible, scalable interventions, as brief reflections can be repeated over time to support sustained well-being throughout long-term goal pursuit.

Aim 1: Examining the Effects of Goal Reflections on Subjective Well-Being. The present study primarily aims to evaluate and compare the effects of two goal reflection strategies on enhancing subjective well-being. To assess the effectiveness of each strategy, I will compare momentary subjective well-being variables, including positive affect, negative affect, stress, and vitality, measured before and after the reflection interventions within the same individuals (within-person comparison), and evaluate differences in these changes across the three reflection conditions (between-person comparison). A control condition involving non-goal-related reflection is included to account for the general benefits of reflection practice on subjective well-being. I hypothesize that individuals in the personal value condition will experience an increase in subjective well-being and a decrease in subjective ill-being

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following the reflection. In contrast, participants in the goal attainment condition may exhibit mixed affective responses, showing an increase in well-being but little to no change in ill-being. Furthermore, I hypothesize that individuals in the personal value condition will demonstrate a greater increase in well-being compared to those in the goal attainment condition.

Aim 2: Exploring the Mediation Role of Basic Psychological Need Satisfaction. The two goal reflection strategies are designed to prompt individuals to reflect on aspects of their goal pursuit experience that may satisfy different psychological needs essential for well-being. Accordingly, the second aim of the present study is to investigate the mediating roles of basic psychological need satisfaction. I hypothesize that need satisfaction will mediate the relationship between reflection condition and momentary changes in subjective well-being and ill-being. Specifically, the value-focused condition will enhance autonomy satisfaction, which in turn will predict increased well-being and reduced ill-being. The attainment-focused condition is expected to enhance competence satisfaction, which may also contribute to improved well-being.

Methods

Participants

I planned to recruit 300 undergraduate students at the University of Oregon for this online experiment, and randomly assign 100 participants per condition. A power analysis was conducted to determine the required sample size for a balanced one-way ANOVA with three conditions. The results showed that a sample size of 300 participants would provide 85% power to detect a small effect size ($f^2 = 0.1$) at a significance level of .05. All participants need to meet the following four criteria: being above 18 years old, being native English speakers, currently not being diagnosed with depression, and living in the U.S.

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Material

Personal Goals. Consistent with Study 1 and 2, participants are instructed to list up to five goals that they are currently pursuing.

Goal Reflection. Each reflection condition included five prompts. In the personal value condition, participants reflected on their reasons for pursuing the goal, how the goal reflected their values and identities, and the intrinsic motivation behind the goal. These prompts were designed based on self-concordance goal theory and self-determination theory. In the goal attainment condition, participants outlined their goal pursuit plans, compared their current progress with their ideal progress, identified potential barriers, and proposed solutions following the implementation intention protocol. These prompts referred to commonly used goal pursuit strategies, such as mental contrasting and implementation intention. The control condition included prompts that asked for personal information and past experiences unrelated to goals, such as describing an ideal weekend or a favorite place on campus. These questions were neutral or slightly positive. To encourage engagement, each reflection prompt included instructions outlining topics or experiences that participants could elaborate on in their responses (see reflection prompts and instructions in Appendix D).

Subjective Well-being. Subjective well-being (SWB) refers to how individuals experience and evaluate their lives, as well as specific domains and activities (National Research Council, 2014). I assessed aspects of SWB that are sensitive to momentary and contextual changes, including positive affect (e.g., joyful, pleased, relaxed, inspired), negative affect (e.g., unhappy, worried/anxious, depressed, angry/hostile, frustrated), vitality (feeling alive and full of energy), and momentary stress. All these items are rated on a 7-point scale ranging from "not at all" to "extremely" at baseline and after goal reflection. I compute a subjective well-being composite score by averaging the positive affect items and vitality, and a subjective ill-being composite score by averaging the negative affect items and stress.

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Additionally, I assess life satisfaction and action crises, which, although relatively stable, are relevant to the goal pursuit experience.

Basic psychological needs satisfaction. I assess the satisfaction of the basic psychological needs for autonomy, competence, and relatedness using the 12-item Basic Psychological Need Satisfaction and Frustration Scale (Van der Kaap-Deeder et al., 2020). Four items each assess autonomy satisfaction, competence satisfaction, and relatedness satisfaction on a 7-point Likert scale ranging from strongly disagree to strongly agree.

Goal Representation. Consistent with Study 2, I include nineteen single-item measures of goal representation. I extracted three components using exploratory factor analysis with oblique rotation, namely value, clarity and external motivation. The unit-weighted component scores served as goal level covariates.

Individual level covariates. We include self-esteem and self-efficacy as individual level covariates. We assess self-esteem using the 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965), and self-efficacy using the 10-item General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995).

Procedure

At baseline, participants rated their momentary positive affect, negative affect, vitality, and stress. They then followed the same goal-listing procedure as in Studies 1 and 2 to list up to five goals and rated each goal on all goal representation items. Following these baseline assessments, all participants were randomly assigned to one of three reflection conditions: value-focused goal reflection, attainment-focused goal reflection, or control. The value-focused goal reflection and attainment-focused goal reflection conditions included five prompts asking participants to reflect on different aspects of their least attainable goal. The goal with the lowest score on attainability was selected to target a goal likely to evoke unintended consequences in the attainment-focused reflection condition, in

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order to explore the boundary conditions for when this strategy may fail to support or even undermine subjective well-being. To avoid priming, participants were told that we selected the goal randomly. For each prompt, participants were encouraged to respond with a short paragraph of at least 3–4 sentences. To ensure thorough reflection, each prompt was displayed for at least 3 minutes before participants could proceed. After completing all five prompts, participants completed a battery of post-intervention assessments, including all subjective well-being measures, basic psychological need satisfaction, and individual-level covariates.

Analysis Plans

Aim 1. I used a multilevel mixed model to evaluate the effects of reflection on subjective well-being. Specifically, I modeled subjective well-being and ill-being separately as outcome variables. The model included interactions between time (baseline vs. post-reflection) and reflection condition (with the control condition as the reference group) as fixed effects to test whether reflections on personal value or goal attainment led to greater changes in subjective well-being compared to the control condition. To account for correlations in repeated measures, the model included a random intercept for participants. Once the model revealed at least a significant main effect of time, I added individual differences (self-esteem, self-efficacy), goal representation component scores (goal value, clarity and external motivation), and self-reported goal reflection experience indices (average reflection word count, difficulty, enjoyment) as potential covariates.

The basic model is specified as:

$$SWB_{ij} = \beta_0 + \beta_1 \text{Time}_{ij} + \beta_2 \text{Condition}_i + \beta_3 (\text{Time}_{ij} \times \text{Condition}_i) + u_{0i} + \epsilon_{ij}$$

To explore whether specific features of goal representation moderate the effects of guided reflection on momentary subjective well-being, a series of multilevel models were conducted for each

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reflection condition separately. For each condition (e.g., value-focused reflection), separate linear mixed-effects models were fit for each goal representation component. In each model, timepoint (pre- vs. post-reflection) served as a within-subject predictor, and one goal representation component (e.g., goal value, clarity, or external motivation) was included as a moderator and all other components were served as covariates. These models tested the interaction between timepoint and the focal component to evaluate whether the impact of reflection on subjective well-being varied depending on that specific aspect of goal representation.

I planned to further explore whether differences in goal representation of the selected goal moderated the effect of goal-related reflection strategies on subjective well-being. For each subjective well-being outcome that showed a significant pre–post change within either goal-related reflection condition, I would estimate moderating effects using separate mixed-effects models predicting the outcome from timepoint, each goal representation component (value, clarity, and external motivation), and their interaction with timepoint within that condition.

Aim 2. To evaluate whether basic psychological need satisfaction and need frustration mediated the effects of reflection conditions on subjective well-being and ill-being, I conducted a mediation analysis using a regression-based approach. First, I regressed need satisfaction and need frustration on reflection conditions, with the control condition serving as the reference group. Next, I regressed subjective well-being and ill-being on both the reflection conditions and the mediators, while also estimating the total effects of reflection conditions on each outcome without including the mediators. I used bootstrapping with 5,000 samples to obtain bias-corrected 95% confidence intervals for the indirect effects—the products of Paths a and b—for each mediator–outcome pair—and concluded that mediation was significant if these intervals did not include zero, reporting the standardized coefficients and the proportion of the total effect mediated for each outcome.

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Results

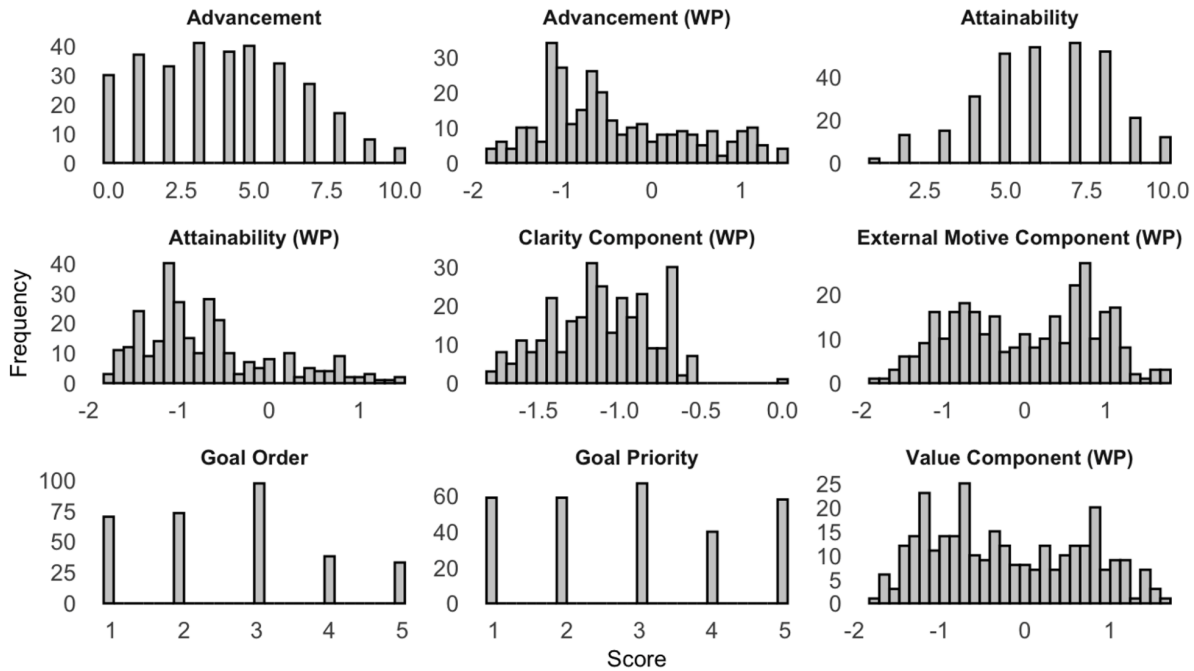
Sample Overview

A total of 335 participants enrolled in the online study. Twenty-four participants were excluded from the final analytic sample due to poor data quality, including insufficient duration, uniform responses across items, or missing outcome data. The final sample consisted of 311 undergraduate students from the University of Oregon. The majority of participants identified as women (68.5%) and White (71.7%), with an average age of 19.79 years ($SD = 9.82$). Participants reported an average of 4.05 personal goals ($SD = 1.09$; mode = 5), resulting in 1,260 total goals listed at baseline.

Each participant was randomly assigned to one of three reflection conditions: attainment-focused reflection ($n = 104$), value-focused reflection ($n = 109$), or self description (control) ($n = 98$). There were no significant differences between conditions on baseline measures of subjective well-being, ill-being and action crisis, all $ps > .05$. Each participant reflected on the goal they had rated as least attainable at baseline. These selected goals did not differ across conditions in their baseline ratings of attainment or advancement, all $ps > .05$. The selected goals showed a relatively wide range and were uniformly distributed across goal value, external motivation, perceived priority, and the order in which they were listed (see Figure 7). This pattern suggests that the least attainable goals were not systematically biased toward a particular type of goal.

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Figure 7: Distribution of Baseline Characteristics of the Selected Goals



Note. Each histogram displays the distribution of a key representation feature of the selected goals, defined as the goal rated as least attainable by each participant. Value, external motive, and clarity reflect within-person standardized component scores derived from an exploratory factor analysis of goal representation items. Attainability and advancement represent raw ratings of two dimensions that loaded onto the clarity component. "WP" denotes within-person z-scores, computed by centering each participant's goal ratings around their personal mean and scaling by their standard deviation.

Effects of Goal Reflection on Subjective Well-being: Pre- to Post-Reflection Comparison

To evaluate whether guided goal reflection influenced participants' momentary well-being, I examined changes in subjective well-being, ill-being, and action crisis before and after the reflection task across the three experimental conditions. A series of linear mixed-effects models were conducted, with each outcome modeled as a function of reflection condition (attainment-focused, value-focused, or control), timepoint (pre- vs. post-reflection), and their interaction. A random intercept was included to account for the nested structure of repeated assessments within individuals. The primary test of interest

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was the condition $\times$ timepoint interaction, which indicates whether changes in outcomes differed across reflection conditions. Fixed effect estimates for each model are presented in Table 17.

Subjective Well-Being. There was a marginal main effect of timepoint, such that participants reported slightly higher well-being following the reflection task compared to baseline, $\beta=0.19$, 95% CI [0.01, 0.36], $p=.033$, though this effect did not remain significant after correcting for multiple comparisons, $p_{adj}=.086$. There were no significant main effects of reflection condition and no evidence of a condition $\times$ timepoint interaction, $p_s > .49$.

Action Crisis. There was a marginal main effect of timepoint, such that participants reported slightly lower action crisis following the reflection task compared to baseline, $\beta=-0.12$, 95% CI [-0.23, -0.01], $p=.003$, though this effect did not remain significant after correcting for multiple comparisons, $p_{adj}=.085$. There were no significant main effects of reflection condition and no evidence of a condition $\times$ timepoint interaction, $p_s > .49$.

Subjective Ill-Being. The model revealed a main effect of timepoint, indicating a significant decrease in ill-being following the reflection task across all conditions, $\beta=-0.54$, 95% CI [-0.70, -0.39], $p<.001$, which remained significant after correcting for multiple comparisons, $p_{adj}<.001$. A significant condition $\times$ timepoint interaction emerged for the attainment-focused condition, $\beta=0.31$, 95% CI [0.10, 0.52], $p=.004$, $p_{adj}=.016$, suggesting that participants in the attainment-focused condition experienced a smaller reduction in ill-being relative to those in the control condition. The interaction for the value-focused condition was not significant, $\beta=0.14$, 95% CI [-0.07, 0.35], $p=.202$, $p_{adj}=.455$. These results suggest that while reflection generally reduced ill-being, the benefit was attenuated in the attainment-focused condition.

To evaluate whether the effects of reflection on ill-being remained after adjusting for individual differences and baseline goal characteristics, I conducted a follow-up mixed-effects model including self-efficacy, self-esteem, and goal representation components (goal value, clarity, and external motivation)

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as covariates. Consistent with the basic model, ill-being significantly decreased from pre- to post-reflection, $\beta = -0.52$, $p < .001$. The interaction between timepoint and the attainment-focused condition remained significant, $\beta = 0.28$, $p = .009$, indicating that the reduction in ill-being was attenuated in this condition relative to control, even after adjusting for covariates. The interaction for the value-focused condition remained non-significant, $p = .213$. See full model results in Table 18 and Figure 8.

To further examine within-condition changes in ill-being, post hoc comparisons were conducted for each reflection condition. Participants in the control condition showed a significant reduction in ill-being from pre- to post-reflection, $\Delta M = 0.52$, 95% CI [0.37, 0.67], $t(287) = 6.82$, $p < .001$. Reductions were also observed in the value-focused condition, $\Delta M = 0.39$, 95% CI [0.24, 0.54], $t(287) = 5.22$, $p < .001$, and in the attainment-focused condition, although the effect was smaller, $\Delta M = 0.24$, 95% CI [0.10, 0.39], $t(287) = 3.29$, $p = .001$. These results indicate that all three reflection conditions were associated with a reduction in ill-being, but the decrease was least pronounced in the attainment-focused condition (see Table 19).

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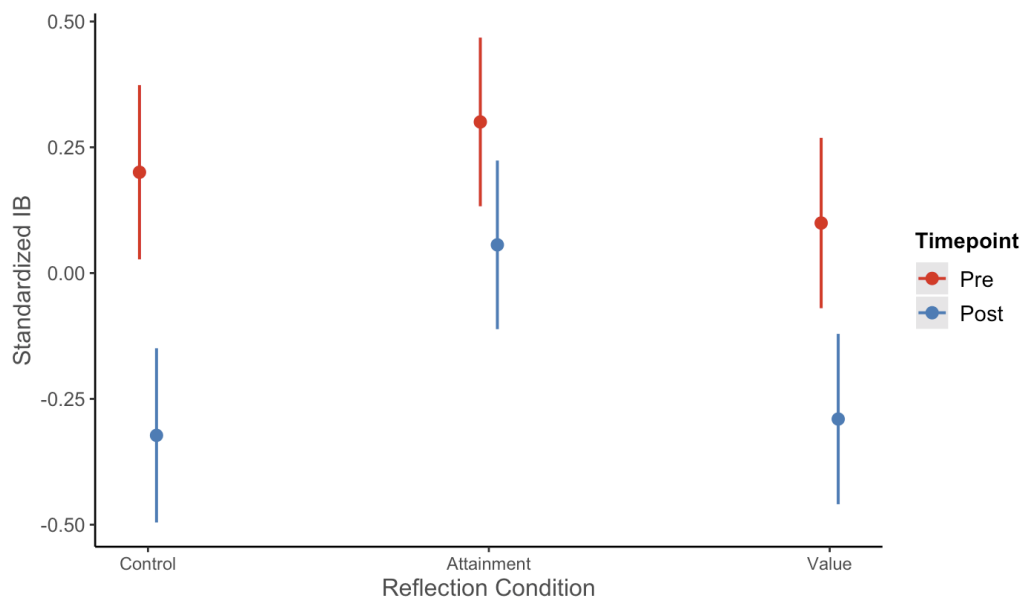
Table 17: Fixed Effects Estimates from Mixed-Effects Models Predicting Subjective Well-being, Action Crisis, and Ill-being

	Well-being		Action Crisis		Ill-being	
	β	CI	β	CI	β	CI
Reflection Condition (Attainment)	-0.17	[-0.50, 0.17]	-0.06	[-0.27, 0.15]	0.14	[-0.14, 0.42]
Reflection Condition (Value)	-0.07	[-0.40, 0.26]	-0.03	[-0.23, 0.18]	-0.05	[-0.33, 0.22]
Timepoint (Post)	0.19	[0.01, 0.36]	-0.12	[-0.23, -0.01]	-0.54***	[-0.70, -0.39]
Attainment $\times$ Post	-0.08	[-0.33, 0.16]	0.08	[-0.07, 0.23]	0.31*	[0.10, 0.52]
Value $\times$ Post	-0.01	[-0.25, 0.23]	0.03	[-0.12, 0.18]	0.14	[-0.07, 0.35]

Note. Each column reports standardized regression coefficients (β) and 95% confidence intervals (CI) from separate linear mixed-effects models predicting well-being, action crisis, and ill-being. The models included fixed effects for reflection condition, timepoint (pre vs. post), and their interaction, with random intercepts for participants. The control condition and pre-reflection timepoint served as reference categories. *p* values were adjusted for multiple comparisons using the False Discovery Rate (FDR) procedure.* $p < .05$, ** $p < .005$, *** $p < .001$.

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Figure 8: Interaction Between Reflection Condition and Timepoint Predicting Ill-being



Note. The figure displays estimated marginal means of ill-being before and after the reflection task across the three experimental conditions (attainment-focused, value-focused, and control), adjusted for self-efficacy, self-esteem, and goal representation covariates. Ill-being scores are standardized. Shaded areas represent 95% confidence intervals.

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Table 18: Multilevel Model Predicting Ill-being from the Interaction Between Reflection Condition and Timepoint, and Covariates

	β	CI
Fixed Effects		
Intercept	0.11	[-0.36, 0.57]
Reflection Condition (Attainment)	0.07	[-0.17, 0.32]
Reflection Condition (Value)	-0.13	[-0.38, 0.11]
Timepoint (Post)	-0.52***	[-0.67, -0.37]
Self-Efficacy (GSE)	-0.09	[-0.20, 0.02]
Self-Esteem (RSE)	-0.34***	[-0.46, -0.23]
Value Component (standardized)	0.08	[-0.01, 0.18]
Clarity Component (standardized)	-0.18***	[-0.28, -0.08]
External Motive Component (standardized)	0.05	[-0.05, 0.15]
Average Reflection Word Counts	-0.00	[-0.01, 0.00]
Reflection Difficulty	0.06*	[0.00, 0.12]
Reflection Enjoyment	-0.01	[-0.08, 0.06]
Attainment $\times$ Post	0.27*	[0.06, 0.48]
Value $\times$ Post	0.13	[-0.08, 0.34]
Random Effects & Model Stats		
σ^2	0.27	
τ_{00}	0.44	
ICC	0.62	
R^2_{Marginal}	0.31	
$R^2_{\text{Conditional}}$	0.74	
Observation (N)	578	
Group (N)	289	
RMSE	0.41	

Note. Standardized regression coefficients (β) and 95% confidence intervals (CI) are reported for fixed effects. Within-person standardized scores (WP standardized) were computed by centering and scaling each participant's ratings across their listed goals. The control condition and pre-reflection timepoint

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serve as reference categories. Random intercepts were included for participants. Marginal R^2 reflects variance explained by fixed effects; conditional R^2 reflects variance explained by the full model including random effects. * $p < .05$, ** $p < .005$, *** $p < .001$.

Table 19: Estimated Pre–Post Differences in Ill-Being Within Each Reflection Condition

Reflection Condition	Contrast	ΔM	95% CI	t	df	p
Control	Pre - Post	0.52	[0.37, 0.67]	6.82	287	< .001
Attainment	Pre - Post	0.24	[0.10, 0.39]	3.29	287	.001
Value	Pre - Post	0.39	[0.24, 0.54]	5.22	287	< .001

Note. ΔM = estimated mean difference from pre to post; CI = 95% confidence interval. Estimates are based on pairwise pre–post comparisons within each reflection condition, obtained from a linear mixed-effects model with a random intercept for participants and adjusted for self-efficacy, self-esteem, and goal representation covariates.

Goal Representation as a Moderator of Reflection Effects on Ill-being

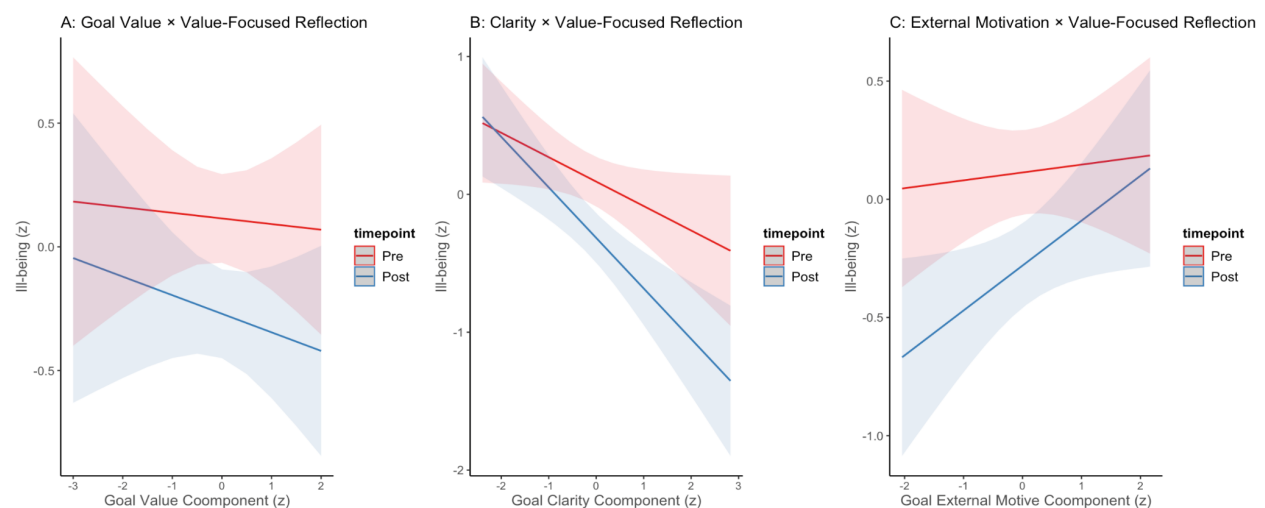
As an exploratory analysis, I tested whether differences in goal representation of the selected goal moderated the effect of reflection on ill-being. I conducted a series of mixed-effects models predicting ill-being (standardized) from timepoint, each goal representation component (value, clarity, and external motivation), and their interaction with timepoint. Models were estimated separately within each reflection condition (value-focused and attainment-focused).

Value-Focused Reflection. A significant interaction emerged between goal clarity component score and timepoint, $\beta = -0.19$, $p = .005$, $p_{adj} = .032$, indicating that participants who reflected on goals with higher clarity experienced greater reductions in ill-being following value-focused reflection. An interaction between external motivation and timepoint was observed, $\beta = 0.16$, $p = .033$, though this effect did not remain significant after correction for multiple comparisons, $p_{adj} = .066$. These interaction effects are illustrated in Figure 9, and full model results are presented in Supplementary Table S3.1.

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Attainment-Focused Reflection. A significant interaction emerged between goal value component score and timepoint, $\beta=0.20$, $p = .016$, $p_{adj} = .047$, suggesting that participants who rated their goal as more valuable experienced smaller reductions in ill-being following reflection. Interactions with goal clarity ($p=.288$) and external motivation ($p=.057$, $p_{adj}=.085$) did not reach significance after correction. The interaction with goal value is illustrated in Figure 10, and full model results are presented in Supplementary Table S3.2

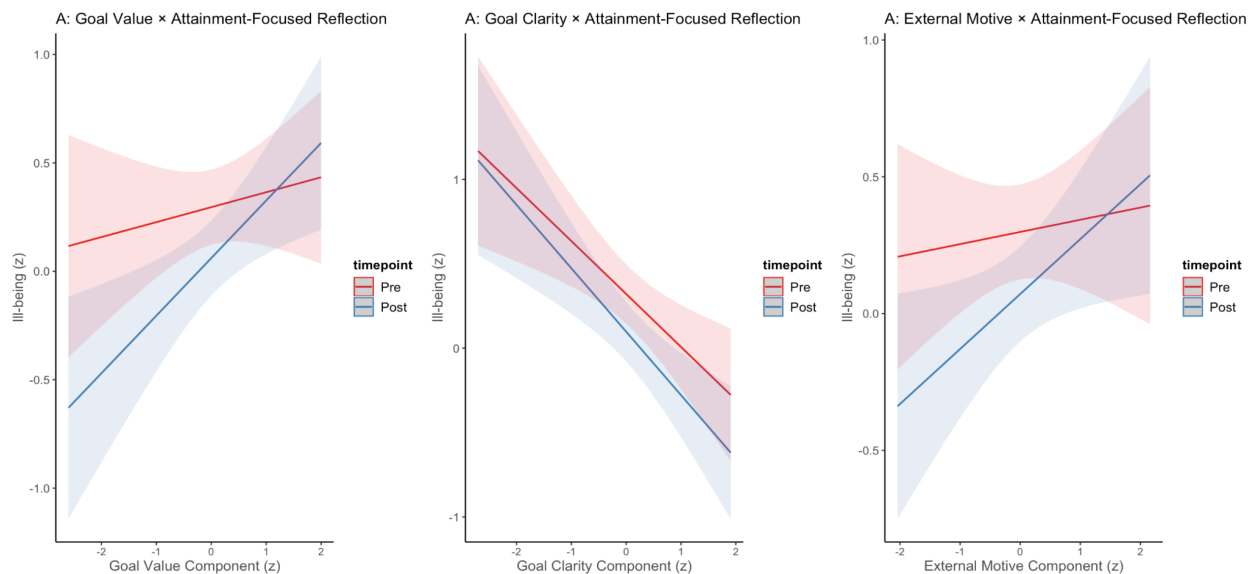
Figure 9: Interactions Between Goal Representation Components and Timepoint on Ill-being in the Value-Focused Reflection Condition



Note. Interaction plots depict estimated marginal means of ill-being (standardized) from mixed-effects models. Each model includes a random intercept for participants and the interaction between timepoint and value (Panel A), clarity (Panel B) or external motivation (Panel C). The other goal representations were included as covariates.

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Figure 10: Interactions Between Goal Value Component and Timepoint on Ill-being in the Attainment-Focused Reflection Condition



Note. Estimated marginal means of ill-being (z-standardized) are plotted from a linear mixed-effects model including a random intercept for participants. The model includes an interaction between timepoint and value (Panel A), clarity (Panel B) or external motivation (Panel C). Goal clarity and external motivation components were included as covariates. The other goal representations were included as covariates. Shaded areas represent 95% confidence intervals.

Effects of Goal Reflection on Subjective Well-Being: Between-Condition Comparison

To compare the effects of reflection strategies on broader aspects of subjective well-being, I examined post-intervention differences in life satisfaction across the three conditions. Additionally, as a preliminary step for evaluating the proposed mediation pathways, I examined post-intervention differences in autonomy, competence, and relatedness satisfaction. For each outcome, I estimated a linear model with reflection condition as the predictor and included reflection length as a covariate, which served as a proxy for participants' engagement with the intervention.

Between-condition comparisons revealed no significant differences in life satisfaction and basic psychological need satisfaction assessed at post-intervention. A linear model predicting life satisfaction showed no significant effect of reflection condition, $F(3,305)=0.90$, $p=.439$, $R^2=.009$. Neither the

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attainment-focused condition ($\beta=-0.06$, $p=.708$) nor the value-focused condition ($\beta=0.08$, $p=.592$) differed significantly from the control group.

Likewise, no condition differences emerged for autonomy satisfaction, $F(3,306)=0.26$, $p=.858$, $R^2=.003$; relatedness satisfaction, $F(3,306)=0.77$, $p=.511$, $R^2=.007$; or competence satisfaction, $F(3,306)=0.69$, $p=.558$, $R^2=.007$. Coefficients for both experimental conditions were small and non-significant across all need dimensions (all $ps > .13$). See Table 20 for condition effects and covariate estimates from each model.

Given the absence of significant group differences in basic psychological need satisfaction, the proposed mediation analyses (Aim 2) were not pursued.

Table 20: Group Differences in Life Satisfaction and Basic Psychological Need Satisfaction at Post-Intervention

Predictor	Life Satisfaction		Autonomy Satisfaction		Competence Satisfaction		Relatedness Satisfaction	
	<i>b</i>	95% CI	<i>b</i>	95% CI	<i>b</i>	95% CI	<i>b</i>	95% CI
Attainment Reflection	-0.06	[-0.36, 0.24]	0.04	[-0.16, 0.23]	0.13	[-0.07, 0.33]	-0.15	[-0.34, 0.05]
Value Reflection	0.08	[-0.22, 0.38]	0.06	[-0.13, 0.26]	0.10	[-0.10, 0.30]	-0.09	[-0.28, 0.10]
Reflection Length	0.00	[0.00, 0.01]	0.00	[0.00, 0.00]	0.00	[0.00, 0.01]	0.00	[0.00, 0.00]

Note. The control condition served as the reference group. All outcomes were assessed only at post-intervention. Degrees of freedom for the models ranged from 305 to 306 due to missing data on individual outcomes. * $p < .05$, ** $p < .005$, *** $p < .001$.

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Discussion

The present study examined the effects of two single-session guided reflection strategies, attainment-focused reflection and value-focused reflection, on subjective well-being through an online experiment using both within-person and between-group comparisons. Contrary to my hypotheses, value-focused reflection did not lead to greater increases in well-being or greater reductions in ill-being compared to attainment-focused reflection or the control condition. Instead, all three conditions were associated with reductions in ill-being, although the decrease was smaller in the attainment-focused condition than in the control condition. No between-condition differences emerged for well-being, life satisfaction, or basic psychological need satisfaction, and the proposed mediation effects were unsupported. Additionally, exploratory moderation analyses showed that reductions in ill-being following value-focused reflection were greater for goals with higher clarity, whereas reductions in ill-being following attainment-focused reflection were smaller for goals with higher perceived value. Overall, the results indicate that single-session reflections can alleviate ill-being, though their effectiveness may depend on the interplay between reflection content and goal characteristics.

Effects of Brief Goal-Related Reflection on Reducing Ill-Being

Across all conditions, participants reported a significant reduction in subjective ill-being following the reflection task. This finding suggests that even a 15-minute single session of engaging with structured prompts may offer immediate benefits for mitigating negative affect and perceived stress. Although the reflection prompts differed in focus, all conditions shared a structured process of deliberate self-expression. Whether participants described themselves, explored why their goals matter, or outlined steps toward future action, each prompt invited them to process self-relevant information in a purposeful way. The observed reduction in ill-being aligns with research showing that disclosing self-relevant information is intrinsically rewarding (Tamir & Mitchell, 2012), and that engaging in reflections

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that affirm personal values or increase self-awareness can buffer against psychological stress responses (Creswell et al., 2005; Lekes et al., 2012). Notably, none of the prompts targeted emotion regulation directly or asked participants to reappraise a negative experience. This suggests that reflecting on and expressing meaningful aspects of the self may yield emotional benefits through indirect pathways, even in the absence of explicit regulatory intent.

The present findings offer preliminary evidence that brief, structured reflections on either the *why* or the *how* of a personal goal can yield immediate emotional benefits. Because subjective well-being was assessed directly after the reflection task, these effects can be attributed to the deliberate act of processing one's goal, rather than to feedback, behavior change, or progress occurring during subsequent goal pursuit. Although the immediate effects on regulating stress and negative affect of simply narrating or journaling one's experience is well-supportive in emotional regulation literature (Frattaroli, 2006; Ullrich & Lutgendorf, 2002), it has been largely overlooked in the goal pursuit domain. Prior observational research on autonomous goal regulation typically examines well-being outcomes through the lens of goal progress, either by modeling progress as a mediator or tracking within-person associations over time (Sezer et al., 2024; Sosin & Neubauer, 2024). These approaches limit the ability to determine whether benefits on subjective well-being are attributable to the behavioral outcomes of goals or merely having and reflecting upon the goals themselves. Moreover, most experimental interventions targeting autonomous regulation or goal attainment do not assess well-being as a primary outcome, or evaluate it only after several training sessions with multiple components, making it impossible to isolate the effects of specific cognitive practices (Ntoumanis et al., 2021). As a result, prior research provides limited insight into whether the well-being benefits of pursuing certain types of goals or engaging with them in specific ways hinge on actual behavior change or progress. The current study helps fill this gap by demonstrating that a single session of guided reflection about one's goal can reduce ill-being in the moment, entirely separate from actual goal progress. These findings point to a potential

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direct affective pathway through which reflecting on goal value or pursuit strategies may support sustained goal striving. By connecting one's goal to their core values or forming action plans, reflection may buffer negative affect that, if left unaddressed, can undermine motivation, reduce persistence, and increase the likelihood of premature disengagement from goal pursuit.

The value-focused reflection condition was designed to help individuals reconnect with the personal significance of their goals by prompting them to articulate why their chosen goal matters to them and how it reflects their values, identities, and long-term aspirations. Although contrary to my hypothesis, the value reflection condition did not differ significantly from the control condition in between-group comparisons, this should not be interpreted as evidence against its effectiveness. First, participants in the value reflection group showed a pre- to post- reduction in ill-being with post hoc contrast analysis, indicating that the process produced significant within-person changes. Second, the control condition was not intended to elicit a neutral process. Participants in that condition engaged in relatively effortless, positively framed self-reflection, including imagining ideal weekends, describing joyful activities, and recalling meaningful people or places. These prompts likely mitigated negative affect by activating positive self-concept and eliciting meaning-making. The fact that value-based goal reflection yielded comparable emotional benefits suggests that linking one's goal to core values and identity may be just as effective in promoting emotional relief as reflecting on pleasant aspects of the self.

Value-focused reflection extends existing research on self-concordant goal pursuit by underscoring the emotional benefits of actively thinking about why a goal matters. While much of the literature on autonomous goal regulation emphasizes the importance of selecting goals that align with one's values and identity (Hope et al., 2019; Sheldon et al., 2019; Sheldon & Houser-Marko, 2001), in many real-world contexts individuals cannot easily abandon or replace their goals. Less attention has been given to how people might reappraise existing goals in more self-congruent ways. The present

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findings suggest that, beyond changing how goals are set, taking time to reflect on personal significance of existing goals may also help regulate negative affect and reduce momentary stress responses during pursuit. One possibility is that the reflection process increased perceived goal value or enhanced autonomous motivation. Alternatively, it may not have altered the goal's underlying attributes, but simply made its personal meaning more salient. Although the specific mechanisms cannot be identified in the current study, the results highlight the constructive power of reflection to elicit meaning and autonomy—a process that, in principle, could be applied to any goal an individual is pursuing.

The attainment-focused reflection condition prompted participants to engage in structured action planning by contrasting their desired state with current progress, anticipating obstacles, and identifying strategies for monitoring goal progress. This approach draws on well-established behavioral techniques such as mental contrasting and implementation intentions, which have consistently demonstrated efficacy in promoting goal-directed behavior (G. Wang et al., 2021). The present findings extend this literature by showing that such techniques may also yield affective benefits, even in the absence of immediate behavior change. Participants who engaged in attainment-focused reflection reported a significant reduction in ill-being from pre- to post-intervention, suggesting that thinking about how to achieve one's goal may facilitate goal pursuit by offering short-term emotional relief in addition to promoting subsequent goal-directed behaviors.

However, the immediate reduction in ill-being was significantly smaller than that observed in the control condition. This pattern suggests that attainment-focused reflection may elicit mixed affective responses, involving both beneficial and potentially taxing elements. On one hand, articulating concrete plans may reduce ill-being by fostering clarity and a sense of control over the pursuit process (Carver & Scheier, 2014; Epstude & Roese, 2011). On the other hand, focusing attention on obstacles and unmet expectations may trigger frustration or self-doubt (Beck et al., 2017). Another possibility is

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that the variation in degree of self-focus across conditions contributed to the observed differences in emotional outcomes. The value-focused and control conditions encouraged reflection on the self, such as values, preferences, and identity, whereas the attainment-focused prompts directed attention toward the goal and its external context. This reduced engagement with the self may have weakened the emotional benefits typically linked to mechanisms such as self-affirmation and self-awareness (Jessop et al., 2018; Pauketat et al., 2016; Ritchie et al., 2011; Sherman, 2013).

The attenuated emotional effect also calls attention to conditions under which attainment-focused reflection may become less effective or even induce subjective ill-being. To probe these boundary conditions, the present study deliberately asked participants to reflect on the goal they perceived as least attainable. In this context, individuals may find it difficult to generate feasible plans or may feel overwhelmed by mentally contrasting their current state with their desired outcome. Yet despite these challenges, attainment-focused reflection still led to a significant reduction in ill-being, suggesting that thinking about how to achieve a goal may provide affective benefits even when it feels out of reach. Moreover, low-attainability contexts may be where this type of reflection is especially useful for supporting behavioral outcomes, whether by helping individuals identify and disengage from unrealistic goals or by adjusting pursuit strategies. Together, these findings suggest that attainment-focused reflection can support sustainable goal pursuit. Further research is warranted to clarify the mechanisms underlying its effects on subjective well-being and to identify the conditions under which it is most, and least, beneficial.

Goal Representation as the Moderators

In addition to examining overall effectiveness, the present study also explored whether differences in goal representation shaped the emotional impact of each reflection strategy. Rather than assuming that reflections are equally effective across all goals, the findings suggest that their benefits

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depend on how individuals mentally represent the specific goal they are asked to reflect on. In the value-focused condition, the strategy was less effective in buffering ill-being when the goal was perceived as low in clarity. This pattern suggests that reflecting on why a goal matters may not be sufficient to counteract the uncertainty or internal conflict associated with unclear pathways for achievement. Interestingly, the effects of value-focused reflection did not vary based on the goal's perceived value or external motivation, indicating that this strategy may still offer emotional benefits even for goals not initially set for intrinsic reasons.

In contrast, the effects of attainment-focused reflection varied as a function of goal value: participants who rated their goal as more personally valuable experienced smaller reductions in ill-being after reflection. This finding suggests that when a highly valued goal is also the least attainable among one's goals, reflecting on how to pursue it may exacerbate stress or action crisis, consistent with prior evidence that individuals struggle to disengage from unfeasible but important goals (Brandstätter et al., 2013b; Brandstätter & Bernecker, 2022; Liem et al., 2008). At the same time, it is notable that reflecting on attainability did not increase ill-being overall. Even when participants focused on their least attainable goal, their negative affect did not worsen from pre- to post-reflection. In other words, although attainment-focused reflection did not reliably improve emotional states, it also did not make people feel worse. This null effect is informative, suggesting that considering barriers and strategies for a difficult goal may be emotionally neutral—attenuating potential benefits without amplifying distress.

Asymmetrical Effects of Reflection on Well-Being and Ill-Being

Despite the significant reductions in subjective ill-being, contradicting my hypothesis, the reflection tasks did not lead to improvements in subjective well-being or reductions in action crisis. These null findings suggest that brief, structured reflection may not be sufficient to boost momentary subjective well-being or resolve internal conflict about goal pursuit. One possibility is that boosting

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subject well-being takes more than just thinking differently about one's goals. Elevating positive affect and vitality may require taking action, such as making progress or engaging in goal-directed behaviors. Little research has assessed the immediate effects of either autonomy support or behavioral change techniques on subjective well-being, making it difficult to tease apart benefits driven by reflection from those resulting from subsequent action. Similarly, action crisis may only respond to reflection when individuals are actively making decisions about disengaging or persisting. This lack of change in action crisis also suggests that the observed reduction in ill-being was not driven by resolving internal conflict, but more likely reflects a short-term emotional relief offered by the reflection process. In summary, brief reflection may buffer distress more readily than it increases positive affect, especially in the absence of progress feedback or tangible success. Future research should replicate and further investigate this asymmetrical effect to better understand how and when reflection influences different dimensions of subjective well-being.

From a between-person perspective, the study also found no differences across conditions in basic psychological need satisfaction. This contradicts the hypothesis that goal-focused reflection strategies would engage more specific motivational pathways, supporting needs such as autonomy and competence respectively, whereas the control prompts would elicit emotional benefits through more general mechanisms, such as imagining enjoyable experiences or expressing personal preferences. The absence of between-group differences may indicate that the motivational pathways underlying reductions in ill-being did not differ across strategies. Alternatively, it is possible that goal-related reflection evoked distinct psychological processes that were not captured by basic psychological need satisfaction. Theoretical and empirical work has shown that need satisfaction and need frustration operate through distinct mechanisms and are often differentially associated with well-being and ill-being (Coxen et al., 2023). However, the present study did not include measures of need frustration,

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which may be particularly relevant for explaining reductions in ill-being. For instance, reflecting on goal value may help reduce frustration in autonomy, and forming action plans may reduce frustration in competence. In contrast, the control condition may have buffered negative affect through non-motivational routes, such as distraction or generic mood induction. However, because need frustration was not assessed, this interpretation remains speculative. Future research should measure both basic psychological need satisfaction and need frustration to better understand the mechanisms underlying the effects of different goal reflection strategies on subjective well-being.

In summary, the present study demonstrates that a brief, single-session reflection focused on either goal value or attainment can offer immediate reduction in subjective ill-being. The findings highlight that reflecting on why or how to pursue a goal can offer emotional benefits, even in the absence of behavior or progress changes. This work offers preliminary support for a direct affective pathway through which cognitive appraisal of personal goals may help individuals sustain goal pursuit over time.

Limitations

Brief Online Reflection Format Limits Reflection Engagement. This study adopted an online, brief, self-guided, written reflection format as a practical first step toward developing scalable interventions to support sustainable goal pursuit. While this format is highly feasible, several of its features may have limited the strength and consistency of its effects. First, completing the reflection in an unsupervised online setting likely introduced variability in participant engagement. Participants may have differed in their level of attention, motivation, or cognitive effort during the task. Second, the written question-and-answer format may have primed participants to produce surface-level responses rather than engaging in meaningful introspection. Third, the static online interface lacked the real-time support often available in in-person interventions. Tasks such as identifying personal values or

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constructing implementation intentions require cognitive effort and metacognitive skill; without scaffolding or feedback, participants who struggled may have disengaged from the process, reducing the intervention's potential emotional or motivational benefits.

To minimize the impact of these limitations on estimates of reflection effects, several safeguards were implemented. The procedure enforced a minimum total reflection duration of 15 minutes, and responses were excluded if they contained fewer than 20 words or exceeded 60 minutes in duration, which suggested multitasking or completion across multiple sittings. Additionally, participants rated their engagement, difficulty, helpfulness, and satisfaction with the reflection task at the end of the study. On average, participants reported that the reflection was satisfying, engaging, and helpful (see descriptive statistics of reflection experience measures in Supplement 3.3). These self-reported indices, along with average reflection word count, were included as covariates in the main analyses to account for variability in engagement. Although these safeguards reduced noise in estimating both within-person and between-condition effects, they could not fully eliminate the possibility that some participants remained unengaged. Notably, the emergence of significant pre–post changes in well-being despite these constraints underscores the promise of guided reflection as a low-cost, scalable intervention. Future research and interventions should aim to create more engaging and supportive reflection experiences, such as through voice-based or chatbot-assisted interfaces, scaffolded prompts that adapt to user inputs, or the addition of a brief instructional module to prepare participants for the reflection task. These enhancements may improve both the depth and consistency of engagement, thereby amplifying the emotional and motivational benefits of guided reflection.

Limitations in Identifying Psychological Pathways Linking Goal Reflection to Well-Being. As an initial exploration, the primary aim of this study was to establish whether brief, guided goal reflection could improve momentary subjective well-being. As such, the study was not designed to isolate the specific psychological mechanisms responsible for the observed reductions in ill-being. The two

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complementary goal-focused reflection strategies were informed by motivational and behavioral change theories, but were not restrictively grounded in any particular framework. Therefore, the present project only assessed basic psychological need satisfaction as one candidate mechanism, leaving other theoretically relevant processes unmeasured. The results further limited the ability to draw conclusions about underlying mechanisms. Reductions in ill-being were observed across all conditions, and participants in the attainment-focused condition experienced smaller reductions compared to those in the control group. Additionally, no differences across conditions were observed in autonomy or competence satisfaction. It is possible that these three types of reflection buffered ill-being through distinct psychological pathways that were not captured in the present study. One alternative interpretation is that the observed reductions in ill-being were driven by non-specific factors common to any structured expressive writing task, such as attentional redirection, temporary distraction, or general mood induction. From this perspective, reflecting on either the why or the how of the goal pursuit did not activate any motivational or self-regulatory process that influences subjective well-being. One may even argue that attainment-focused reflection triggered negative affect that offset the benefit typically associated with structured writing, resulting in smaller reductions in ill-being relative to the control condition.

However, several findings suggest that the observed reductions in ill-being were not simply due to factors that are not relevant to goals. First, exploratory analyses showed that different components of goal representation moderated the effects of each reflection strategy: goal clarity moderated the effects of value-focused reflection, while goal value moderated the effects of attainment-focused reflection. If the buffering effects were driven entirely by generic aspects of the writing task, the effects should not vary systematically based on how participants represented the goals they reflected on. Moreover, when indices of reflection experience (e.g., enjoyment, difficulty, and response length) were included as covariates in the interaction models, the moderating effects of goal representation remained. This

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reduces the likelihood that the observed interactions were simply artifacts of variability in task enjoyment or engagement influenced by goal characteristics. Additionally, participants in the two goal-related conditions reported similarly on their reflection experiences. In contrast, participants in the control condition found the task more enjoyable and provided longer written responses. This pattern is inconsistent with the idea that participants in the attainment-focused condition had a uniquely negative experience that offset the emotional benefits typically associated with structured reflection. Taken together, even though the present study is limited in its ability to clarify the specific mechanisms accounting for the observed effects, the findings suggest that goal-related reflection strategies prompt individuals to think differently about their goals in ways that can reduce ill-being.

Future Direction

To advance understanding of how goal reflection influences well-being, future research should aim to identify the specific psychological mechanisms responsible for its effects following successful replication. One important step is to assess a broader range of constructs beyond basic psychological need satisfaction. This includes measuring need frustration, which may be more closely tied to reductions in ill-being, as well as potential mediators such as changes in goal representation components or self-insight. Incorporating control conditions that do not involve disclosing personal experiences, such as answering questions from assigned readings, can also disentangle the potential benefits elicited by self-relevant processing from structured writing tasks. Future work may also benefit from developing more targeted reflection prompts designed to selectively engage distinct psychological mechanisms. For example, comparing reflections on intrinsic versus external reasons for pursuing a goal could clarify whether making specific types of motivation salient leads to immediate changes in subjective well-being. Similarly, asking participants to engage in attainment-focused reflection for goals

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they have just set versus goals they have been pursuing for some time may help isolate the emotional impact of past goal striving experiences.

Another important direction for future research is to examine how the effects of goal reflection vary across different goal pursuit contexts. The interaction between reflection strategies and goal representation observed in this study suggests that the effectiveness of reflection may depend on the characteristics of the goal being considered. The present study focused on participants' least attainable goals and found that attainment-focused reflection did not trigger additional negative affect in this context. Future research should explore other boundary conditions, such as goals associated with repeated failure, high personal value but low perceived attainability, or stalled progress due to low motivation. It is important to accumulate empirical data that can guide the tailoring of reflection strategies to specific types of goals. Additionally, goal reflection likely plays a unique role during decision points in goal pursuit, such as setting short-term goals, resolving goal conflicts, or deciding whether to adjust or disengage from a goal. Reflection in these moments may not only influence well-being, but also support more deliberate decision-making by helping individuals evaluate relevant goal features such as value and feasibility. Exploring these use cases can extend theoretical models of self-regulation by situating reflection as a context-sensitive process that supports adaptive goal management over time, rather than a static one-time technique.

Building on the immediate buffering effects on negative affect, the next step is to develop scalable interventions by evaluating the accumulated effects of reflection across multiple sessions, as sustained practice may be necessary to yield improvements in subjective well-being and life satisfaction. A longitudinal, within-person design would allow researchers to compare various goal-related reflection strategies directly, providing insights into when and which types of reflection are most effective. Beyond evaluating immediate affective outcomes, future research should assess longer-term changes in motivation, behavior, and perceived goal progress, and explore reciprocal pathways between

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momentary well-being and these downstream outcomes. Establishing temporal precedence among these processes would provide valuable insights for understanding the causal mechanisms through which thinking differently about one's goals supports sustained goal pursuit and long-term well-being.

In summary, the present project provides preliminary evidence that a brief, self-guided session of structured reflection, either value-focused or attainment-focused, can yield immediate reductions in subjective ill-being, even in the absence of behavioral change or progress. Although these two reflection strategies did not differ in their effects on well-being, goal representation components moderated their impact, highlighting the importance of aligning reflection strategies with goal characteristics and clarifying their boundary conditions. These findings underscore the potential of reflection-based interventions to support sustainable goal pursuit through an affective pathway that promotes subjective well-being.

CHAPTER V: OVERALL DISCUSSION

Summaries of Study Aims and Findings

This dissertation comprises three projects that aimed to expand the understanding of how goal representation shapes goal pursuit experiences. The first project was a three-month online longitudinal study that evaluated the stability of goal representation across the goal-striving process and its prospective associations with goal pursuit experiences in a multiple-goal context. The findings highlighted the multifaceted nature of goal representation by demonstrating that different components were associated with distinct aspects of goal pursuit experience, that the six-component structure was aligned across two timepoints, and that the components followed different trajectories over the course of goal pursuit. The second project was an online cross-sectional study introducing a novel network-based approach to describe goal–identity systems, providing an expanded framework for understanding the multifaceted ways in which goals and identities connect. Descriptive findings showed that goals vary in the number of identities they connect with, and individuals tend to perceive different goals as connected to different subsets of identities. At the goal level, broader goal–identity integration was associated with higher perceived goal value and attainability, while at the individual level, centralization of the goal–identity system emerged as a promising structural feature explaining individual differences in life satisfaction. The third project was an online experiment aimed at identifying goal reflection strategies that enhance subjective well-being. The project provides preliminary evidence that a brief, self-guided session of structured reflection, either value-focused or attainment-focused, can yield immediate reductions in subjective ill-being, with these effects moderated by goal representation. Together, these projects advance understanding of how goals are mentally represented, how they connect to personal identities, and how targeted reflection strategies can shape emotional experiences

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in goal pursuit, laying the groundwork for future research on fostering fulfilling and sustainable goal pursuit.

Implications

A Multifaceted View of Goal Representation

This dissertation provides robust empirical support for conceptualizing goal representation as a multifaceted construct. Rather than reducing individual dimensions of goal characteristics to a single dominant component, such as perceived value, the findings illustrate that goal representation comprises multiple distinct yet interrelated components. Study 1 demonstrated that relative differences in goal representation components were differentially associated with goal pursuit outcomes including progress, effort, and action crisis. In addition, the structure of goal representation was congruent across a three-month period, providing preliminary evidence for its measurement invariance. These findings suggest that goal representation components capture different cognitive and motivational features of how people think about their goals, and each contributes uniquely to the goal pursuit process. Study 3 further reinforced the value of this multifaceted perspective by showing that the effects of guided reflection strategies vary as a function of different goal representation components, highlighting the advantages of including a comprehensive set of goal representation components when seeking to optimize intervention effectiveness. These findings illustrate the theoretical and applied significance of adopting a multifaceted approach. From a theoretical standpoint, this view allows researchers to reconcile disparate frameworks that emphasize different dimensions (e.g., expectancy-value theory, self-concordance theory, goal system theory) and to investigate their joint and unique effects in shaping goal pursuit experience. From an applied perspective, capturing this complexity enables tailored goal interventions that do not assume all goals are the same and helps identify which kinds of goals are most responsive to particular strategies.

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One methodological contribution of this work lies in the data-driven operationalization of goal representation. Across studies, exploratory factor analysis was used to identify latent components from empirical data, rather than imposing theoretically predefined structure. Although the number and composition of components varied across studies due to differences in item selection, several components, such as value, external motivation, and attainability, were consistent across samples. This approach extends previous research by surfacing novel insights about the roles of goal representation components. For example, external motivation was associated with subsequent goal progress, challenging common assumptions that external motives are uniformly maladaptive. Similarly, in Study 2, goal–identity integration was positively associated with perceived attainability, suggesting that the self may shape not only goal value, as most theories propose, but also feasibility appraisals. By grounding the structure of goal representation in empirical data, this approach offers a nuanced framework for understanding how distinct cognitive and motivational features of goals influence goal pursuit.

The Importance of Contextualizing Goal Research Within Multiple-Goal Pursuit

Goal samples collected across all three projects highlight that managing multiple goals is the norm rather than the exception. This underscores the need to study goal pursuit as a process that unfolds within a dynamic set of goals, rather than focusing narrowly on a single focal goal. Moreover, multiple-goal pursuit is not merely a collection of independent pursuits. It involves additional cognitive and motivational demands that also shape individuals' experience of pursuing each goal, such as effort allocation, attentional shifts, managing trade-offs, and resolving conflicts. Aggregating across goals or selecting a single representative goal overlooks these dynamics and fails to capture how people actively manage their goals in context. Preserving and modeling within-person, goal-level variance is therefore critical for understanding motivation in real-world settings. Study 1 further demonstrated that the extent to which a goal's representation deviated from a person's own average was prospectively associated with effort, progress, and action crisis. These findings suggest that goal representation plays

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a role in managing multiple goals by capturing how relative differences across a person's goals shape their pursuit experiences. Thus, understanding the role of goal representation requires a framework that considers the multiple-goal context.

Acknowledging the need to study goal pursuit within a multiple-goal context does not preclude the use of aggregated measures or designing experiments with one focal goal. Rather, it highlights the importance of accounting for goal-level variation in study design, data collection and analysis process. In my second project, I leveraged a network-based structure to examine the associations between goal–identity integration and well-being at the person level while explicitly modeling variability across goals. This structure allowed individual goals to connect with different identities and characterized the configurations of the goal–identity system through network indices that capture not just average connection strength, but also the distribution and organization of pairwise goal-identity connections. This approach avoids flattening goal–identity alignment into a single summary score and expands the dimensionality of person-level variance in relations between goals and the self. In doing so, the network framework aligns with the multiple-goal pursuit context by preserving pairwise goal-identity connections across all the goals a person has. Similarly, although my third project asked participants to reflect on only one goal, the design still preserved the broader multiple-goal context. By assessing all goals on the full set of goal representation components, I was able to evaluate how the selected goal compared to the individual's other goals, capturing its relative representativeness. These approaches illustrate that individual-level or focal-goal analyses can be meaningfully contextualized within a multiple-goal pursuit framework that acknowledges the complexity, interdependence, and structured variation across the goals people manage concurrently.

Mapping Goal–Identity Connections to Advance Understanding of the Self in Goal Representation

This dissertation introduces a novel method for operationalizing the relationship between goals and the self by mapping pairwise connections between individual goals and individual identities. This

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approach expands beyond traditional self-concordance and identity-based motivation frameworks, which typically assess goal–self alignment using composite motivational scores or global ratings of how much a goal reflects a general self-concept. Instead, this network approach acknowledges the complexity of self-concept by evaluating how each goal connects with the full range of identities a person holds. This allows for a more granular and structurally informed account of how the self influences perceptions of goals across all representation components.

Findings from Study 2 demonstrate that this approach is both feasible and informative. Nearly all participants linked at least one of their goals to an identity, but most goals connected to only a subset of the identities they nominated. This pattern suggests that while identity relevance is common, it is selective rather than global, highlighting the importance of specifying which goals connect with which identities. Additionally, goals with broader identity integration were rated as higher in perceived value and attainability and were associated with greater commitment and effort. These findings underscore the value of this approach in advancing our understanding of how the self shapes goal representation and pursuit. Operationalizing self-concept as a set of identities also provides a flexible structure for exploring the role of the self in dynamic goal pursuit contexts. Because identity salience varies across situations, this mapping offers a baseline for predicting how goal–self relations shift in response to contextual cues. It also introduces new perspectives on inter-goal relationships, such as identifying goals that connect to the same identity. This feature enables researchers to examine how identity-based links among goals may facilitate or constrain coordination, prioritization, or conflict resolution. Moreover, because feedback is often directed at specific goals or identities, this structure allows for the examination of how evaluative experiences may spread across the broader system of goals and self-perceptions. Together, these findings demonstrate that mapping goal–identity connections in a network structure is not only methodologically feasible but conceptually valuable. It expands our understanding

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of the role of the self in shaping goal representation and provides a foundation for future research on the dynamic relationship between the self and goal representation across contexts.

The Importance of Evaluating Goal Pursuit Interventions Through the Lens of Momentary Subjective Well-Being

Another contribution of this dissertation is highlighting the impacts of goal pursuit interventions on momentary subjective well-being. Across conditions, both value-focused and attainment-focused reflections were associated with reductions in negative affect, suggesting that prompting individuals to think differently about their goals can offer immediate emotional benefits. These findings support the idea that goal reflection strategies, while typically designed to promote long-term motivation and behavior change, can also influence how people feel about their goals in the moment. Importantly, findings from Study 3 indicate that strategies effective for enhancing motivation or facilitating action do not necessarily produce uniformly positive emotional responses. Although reflecting on action plans for the least attainable goal still buffered negative affect, the effect was smaller than that of the control condition, which simply asked participants to reflect on their personal preferences and values. Moreover, the effects of both reflection strategies varied as a function of goal representation. For instance, value-based reflection is more effective on goals rated higher in clarity, but less effective on goals high in external motivation. These findings underscore the importance of including momentary subjective well-being as a key outcome in the evaluation of goal pursuit interventions. Designing strategies that ignore emotional consequences risks undermining engagement or triggering unintended backfire effects. Reflection strategies should therefore be tailored not only at the individual level but also at the goal level, by accounting for differences in how goals are represented. In this way, interventions can be optimized to support long-term goal striving by promoting subjective well-being alongside behavioral outcomes.

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Future Directions in Supporting Individuals in Setting Goals that Lead to Fulfilling Goal Pursuit

This dissertation takes initial steps toward addressing a broader question: how can we support individuals in setting and engaging with goals that contribute to a fulfilling and sustainable goal pursuit experience? First, it expands the understanding of goal representation by demonstrating its multifaceted structure and identifying prospective associations between relative differences in goal representation across a person's goals and their pursuit experiences. Second, it highlights the dynamic nature of goal representation, showing that its overall structure is congruent over time, while specific components, such as attainability, are susceptible to contextual and psychological shifts. These findings provide initial empirical evidence to inform what components of goal representation may be most relevant in a multiple goal pursuit context, and how to model their variation across multiple goals and over time. Third, it introduces a new way of conceptualizing the self-goal relationship by mapping connections between specific goals and multiple identities, offering a more nuanced view of how the self shapes goal representation and pursuit. Finally, it demonstrates that guided reflection on personal goals can influence momentary subjective well-being, an outcome often overlooked in intervention research. Collectively, these findings point to novel directions for how we may leverage the way people think about their goals to improve the quality of their goal pursuit journey. This dissertation offers an early step toward a much larger research agenda. The following sections outline two promising directions for extending this work and deepening our understanding of fulfilling goal pursuit.

Incorporating Multifaceted Goal Representation into Research on Multiple-Goal Management Processes

A promising direction for future research is to integrate multifaceted goal representation into the study of goal management processes in the context of multiple-goal pursuit, such as goal shielding, adjustment, disengagement, and prioritization. These processes are critical for maintaining well-being, particularly when individuals face competing demands or limited resources. Past research has often examined these dynamics through the lens of individual differences or pairwise goal comparisons (e.g.,

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work vs. life goals). However, understanding how people manage their goals in daily life requires a broader, system-level perspective. Challenges in resolving goal conflict or initiating adaptive disengagement are rarely attributable to one specific goal attribute alone, but instead emerge from the overall configuration of a person's goal system. For example, prioritization may be straightforward when one goal stands out in value, but it becomes more emotionally taxing when several goals are highly valued and perceived as equally important.

To support this system-level view, future research should treat the goal, not the person, as the basic unit of analysis and incorporate a comprehensive set of goal representation components. One fruitful direction is to examine which components of goal representation either jointly or uniquely predict engagement, persistence, or reallocation across multiple goals. Doing so will require the development of simplified, psychometrically sound instruments that capture the most relevant components for specific regulatory processes. In addition, a person-centered approach can help characterize how individuals represent their goals as a system. Profiles of goal representation may capture the degree of similarity, imbalance, or differentiation across goals, either within a specific component (e.g., attainability) or across multiple components. Such profiles could help explain why some individuals are better equipped to manage multiple goals concurrently.

Gaining insight into how the ease and effectiveness of pursuing multiple goals varies as a function of goal system features and how experiences such as setbacks or successes with one goal shape the representation of others will be critical for identifying leverage points for intervention. Rather than focusing on individual goals in isolation, future work may benefit from targeting the structure of the goal system itself. Interventions could help individuals design goal systems in which goals facilitate or compensate for one another, ultimately fostering a more coherent, flexible, and sustainable pursuit experience that supports long-term well-being.

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Translating Theoretically Driven Goal Representation Research into Intervention Design

A second direction for future research is to translate theory-driven work on goal representation into intervention design. Robust empirical evidence support specific features of goal representation links specific features of goal representation, such as perceived value, attainability, autonomous motivation, and low inter-goal conflict to a wide range of positive outcomes including goal performance, attainment, and life satisfaction. Yet few studies have attempted to experimentally manipulate these components or directly test how shifts in goal representation influence pursuit experiences or outcomes.

Yet few studies have attempted to experimentally manipulate these components or directly test how shifts in goal representation influence pursuit experiences or outcomes. Beyond widely used frameworks like SMART goals, which emphasize specificity and measurability, there is limited guidance on how to help individuals transform abstract desires or externally imposed demands into goals that feel self-congruent, attainable, and coherent with their broader goal system. The present dissertation suggests that value-focused reflection and forming new goal–identity connections may be promising strategies for improving goal pursuit experiences. Future intervention designs should build on these insights by intentionally targeting components of goal representation and evaluating how such changes affect both behavioral outcomes and subjective experiences during pursuit.

To move this line of work forward, future interventions should also expand how "effectiveness" is conceptualized and measured. Goals are inherently subjective, and so are the experiences they produce. In addition to tracking behavioral outcomes such as progress or persistence, interventions should evaluate affective responses, perceived ease, stress, and subjective progress to more holistically assess their impact. These indicators capture fulfillment more directly and may be critical for identifying strategies that support sustainable engagement over time. In this way, the abstract ideal of a "fulfilling

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and sustainable” goal pursuit can be translated into concrete outcome metrics that reflect individuals’ daily experiences with their goals.

Finally, intervention research should treat the goal as the basic unit of analysis as well. Because goal representation varies across the goals a person holds, tailoring interventions to one or more aspects of the specific target goal is essential for optimizing effectiveness and minimizing unintended consequences. This goal-level tailoring contributes to a person-centered approach by acknowledging that individuals may have very different needs or responses across the goals they have. Rather than applying a one-size-fits-all approach across all goals, future work should identify goal-level boundary conditions and moderators that influence which strategies work best, for which types of goals, and in what contexts. Collectively, these steps would support the development of precise, dynamic, and person-centered interventions that promote a more fulfilling and sustainable goal pursuit experience.

CONCLUSION

This dissertation comprises three projects that aimed to expand the understanding of how goal representation shapes goal pursuit experiences. Study 1 showed that goal representation is multifaceted, with distinct components associated with different pursuit outcomes at the goal level and varying in their stability over time. Study 2 introduced a network-based approach to map how multiple goals connect to multiple identities, revealing that broader integration with the self is linked to higher perceived value, attainability, and engagement. Study 3 demonstrated that brief, structured reflections, whether focused on goal attainment or alignment with personal values, can reduce ill-being in the moment, with effects shaped by the characteristics of the reflected-upon goal.

These findings contribute to motivation science by clarifying the structure and variability of goal representation, expanding methods for capturing goal–self relations, and demonstrating that momentary subjective well-being is a valuable target for goal-related intervention. This dissertation underscores the value of adopting a multifaceted approach to systematically evaluating the role of goal representation and highlights the importance of accounting for multiple-goal pursuit in assessment and study design. Future research can build on this work to develop adaptive goal setting and reflection strategies that promote both well-being and sustainable goal pursuit.

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APPENDIX

Appendix A. Six-Component of Goal Representation at Baseline

Items	Value	External	Attainability	Instrumentality	Consensus	Measurability
attractiveness achievement	0.92	-0.16	-0.11	-0.07	-0.09	0.15
attractiveness progress	0.84	-0.15	-0.08	-0.06	-0.02	0.12
importance	0.66	0.05	0.04	0.05	0.09	0.07
identified motivation	0.54	0.02	0.03	0.04	0.23	0.09
construal level	0.49	0.09	0	0.06	-0.12	-0.12
ought motivation	-0.16	0.74	0.03	0.09	0.02	0.03
external motivation	-0.04	0.71	0.04	-0.05	0.04	0.08
introjected motivation	-0.07	0.48	-0.04	0.22	0.1	0.06
external importance	0.28	0.47	0.07	0	0.05	-0.06
conflict	-0.07	0.35	-0.16	0.09	-0.23	-0.02
visibility	0.23	0.33	0.25	-0.18	0.06	-0.01
attainability	0.02	0.05	0.67	-0.06	-0.07	0.1
difficulty	0.48	0.04	-0.53	0.06	-0.03	0.12
clarity	-0.04	0.04	0.53	0.08	0.02	0.41
affordance	0.01	0.02	0.49	0.02	-0.01	0.09
instrumentality	0.08	0.15	-0.05	0.59	0.11	0.05
connectedness	-0.1	0.14	-0.04	0.58	0.02	0.07
ideal motivation	0.36	-0.16	-0.04	0.47	0.05	-0.15
meaningfulness	0.26	0.09	0.22	0.32	-0.06	-0.19
control	-0.04	-0.18	0.12	0.28	-0.02	0.16
commonality	-0.09	0	-0.04	0.1	0.62	-0.16
social desirability	0.16	0.11	0.15	-0.04	0.61	-0.12
basic needs	0.08	-0.05	-0.05	0.32	0.44	-0.03
intrinsic motivation	0.1	-0.1	0.28	0.1	-0.4	-0.15
measurability	0.01	0.07	0.11	0.06	-0.03	0.63
specificity	0.17	0.05	0.07	-0.01	-0.19	0.62

Appendix B. Goal Representation Measures

Construct	Items	Scale	Study1	Study 2&3
Construal Level	To what extent do you think this goal is a high level goal or a low level goal?	[1: A low level goal 4: A mid-level goal 7: A high-level goal 8: I'm not sure]	✓	✓
Temporal Duration	How far in the future did you set this goal to be achieved?	•This is a short-term goal that is set for the next few days •This is a medium-term goal that is set for the next few weeks •This is a medium-long-goal that is set for the next few months •This is a long-term goal that is set for the next few years •Not specified	✓	
Frequency	Is this a one-time goal or a reoccurring goal?	•This is a one-time goal that is set to be achieved only once •This is a recurring goal that is set to be achieved or maintained on a regular basis •Not specified	✓	
General Specificity	How specific is this goal?	•This is a one-time goal that is set to be achieved only once •This is a recurring goal that is set to be achieved or maintained on a regular basis •Not specified	✓	
End State Specificity	How specific is the target of this goal framed?	•It is framed as a specific value •It is framed as a range of values or performance •It is framed as a general level of performance •Not specified	✓	
Approach vs.	To what extent do you	[1: Definitely an approach goal	✓	

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Avoidance	think this goal is an approach goal or an avoidance goal?	4: Neither an approach nor an avoidance goal 7: Definitely an avoidance goal 8: I'm not sure]		
Attainment vs. Maintenance	To what extent do you think this goal is an attainment goal or a maintenance goal?	[1: Definitely an attainment goal 4: Neither an attainment nor a maintenance goal 7: Definitely a maintenance goal 8: I'm not sure]	✓	
Measurability	To what extent can you objectively measure the progress of this goal?	[1: Not at all 4: Moderate 7: very much]	✓	
Importance	How important is this goal to you?	[1: Not at all 4: Moderate 7: very much]	✓	✓
Meaningfulness	To what extent is this goal consistent with the core values that guide your life (e.g., kindness, achievement, autonomy, and so forth)?	[1: Not at all 4: Moderate 7: very much]	✓	✓
Instrumentality	How much does working on this goal improve your chances of success in other life goals?	[1: Not at all 4: Moderate 7: very much]	✓	
Connectedness	How related is this goal to other goals you are working on?	[1: Not at all 4: Moderate 7: very much]	✓	
Attractiveness of Achievement	How good will you feel when you successfully achieve this goal?	[1: Not at all 2: A little good 3: Somewhat good 4: Good 5: Very good 6: Great 7: One of the best feelings]	✓	✓
Attractiveness of Making Progress	How good will you feel when you make progress on this project?	[1: Not at all 2: A little good 3: Somewhat good 4: Good 5: Very good 6: Great 7: One of the best feelings]	✓	
Social Desirability	Do you agree that other people think this is a desirable goal?	[1: strongly disagree 4: neutral 7: strongly agree]		✓

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Difficulty	How challenging is it for you to achieve this goal?	[1: not at all 4: Moderate 7: very much]	✓	
Affordance	How much does your current environment enable you to work on this goal?	[1: not at all 4: Moderate 7: very much]	✓	✓
Attainability	How likely is it for you to successfully achieve this goal? Please select a percentage that represents the likelihood of success.	[0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%]	✓	✓
Clarity	Do you agree that you have a clear sense of how you can work toward this goal in the present?	[1: strongly disagree 4: neutral 7: strongly agree]	✓	✓
Controllability	Do you agree that the achievement of this goal completely depends on you?	[1: strongly disagree 4: neutral 7: strongly agree]	✓	
External Motivation	Do you agree that you set this goal because somebody else wants you to or because the situation demands it?	[1: strongly disagree 4: neutral 7: strongly agree]	✓	✓
Introjected Motivation	Do you agree that you set this goal because you would feel ashamed, guilty, or anxious if you didn't?	[1: strongly disagree 4: neutral 7: strongly agree]	✓	✓
Identified Motivation	Do you agree that you set this goal because you believe it's an important project to work on?	[1: strongly disagree 4: neutral 7: strongly agree]	✓	✓
Intrinsic Motivation	Do you agree that you set this goal because of	[1: strongly disagree 4: neutral 7: strongly agree]	✓	✓

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	the fun and enjoyment that it provides you?			
Ought Motivation	Do you agree that you set this goal because you believe other people expect you to?	[1: strongly disagree 4: neutral 7: strongly agree]	✓	
Ideal Motivation	Do you agree that you set this goal because you believe it is part of who you ideally want to become?	[1: strongly disagree 4: neutral 7: strongly agree]	✓	
Distance from Basic Needs	Do you agree that you set this goal to fulfill your basic needs, such as physical well-being or feeling secure?	[1: strongly disagree 4: neutral 7: strongly agree]	✓	
Commonality	Do you agree that this is a common goal that other people also set for themselves?	[1: strongly disagree 4: neutral 7: strongly agree]	✓	
Visibility to Others	To what extent are the people close to you aware of this goal?	[1: not at all 4: Moderate 7: very much]	✓	
External Importance	How important is the success of achieving this goal to the people close to you?	[1: not at all 4: Moderate 7: very much]	✓	✓
Conflict	How much conflict does working on this goal cause for your other goals	[1: not at all 4: Moderate 7: very much]	✓	

Appendix C. Striving Behavior Measures

Construct	Items	Scale	Study1	Study 2
Commitment	How committed are you to this goal?	[1: not at all 4: Moderately committed 7: very committed]	✓	✓
Urgency	How much urgency do you feel to working on this goal?	[1: no urgency at all 4: Moderate 7: very much]	✓	✓
Effort	How much energy and effort do you generally spend on this goal?	[1: no energy at all 4: Moderate 7: very much]	✓	✓
Initial time	How long have you had this goal in mind?	•I've had this goal for years •I've had this goal for a year •I've had this goal for several months •I've had this goal for a month •I've had this goal for several weeks •I've had this goal for a week •I've had this goal for several days •I set this goal today	✓	
Regret	How much regret will you feel if you fail at this goal?	[1: not at all 4: Moderate 7: very much]	✓	
Procrastination	How often do you procrastinate on this goal?	[1: never 4: Half of the time 7: Always]	✓	

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Action Crisis Scale

Please think about your goal:XXX, and go through each of the statements below. For each statement, please select to what extent you agree with the statement from 1 to 5.

1. Lately I feel torn between continuing to strive for this goal and abandoning it
2. So far my goal pursuit has been smooth and unproblematic
3. I often feel stuck and am unsure of how to continue pursuing this goal
4. I often ruminate about my goal
5. I have thought about giving up this goal
6. I find myself not having worked on my goal, despite my intention of doing so

Appendix D. Reflection Prompts

Person Value Condition

1. Why is pursuing this goal important to you?

Share specific reasons or provide examples, and feel free to include multiple perspectives or aspects that come to mind.

2. How does this goal show what really matters to you or what you believe in?

Think about the values that are important in your life, like growing as a person, being kind, or taking responsibility. How does working toward or reaching this goal help you live out those values?

If it feels right, share a specific moment when you noticed that your goal really connects with what matters most to you. Don't be afraid to go into detail—your story might inspire new ideas or reflections!

3. How does working toward this goal fit with the kind of person you believe you are?

Start by reflecting on your self-image, including your identities or personality traits, and consider whether pursuing this goal has helped you clarify or strengthen that image.

If relevant, describe a specific moment when you realized how this goal reflects or helps you discover a meaningful aspect of yourself. Take this opportunity to explore how this goal connects to your sense of who you are.

4. How does this goal reflect the person you want to become?

Picture an ideal version of yourself—the qualities you want to build, the milestones you hope to reach, and the difference you want to make. Think about how working on this goal helps you grow into that ideal self.

Take a moment to describe how this goal helps you feel more connected to your future self and gives you a clearer sense of purpose. Feel free to go into detail about why this goal matters to your personal growth!

5. Why does this goal feel meaningful to you, rather than something you're doing because others expect it?

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Think about times when you really enjoyed working on this goal or felt proud of the progress you made. What made those moments special? Share those experiences and explain why they stood out to you.

If you can't think of any such moments, consider ways to make this goal more exciting, motivating, or personally meaningful. What changes could you make so it better matches your interests, values, or dreams? Take your time to explore these ideas and describe them in detail.

Goal Attainment Condition

1. If you broke this goal into smaller, doable parts, what would the main steps be?

Take a moment to think about how you could turn this big goal into smaller, clear steps. Describe each step, including what tasks you need to do and any help or resources you might need along the way.

If it feels hard to plan out all the steps, that's okay! Describe what's unclear—what questions do you need answered or what info would help you create a better plan?

2. How does your current progress compare to what you planned or expected?

Take a moment to think about how far you've come with this goal.

Describe how you track and evaluate your progress. How often do you check your progress? Are you on track with what you originally planned, or have things turned out differently?

Reflect on where you're making good progress and where you might be falling behind.

3. What setbacks have you faced while working toward this goal, and how did they affect your progress?

Think about any challenges you've encountered—what were they, and what caused them? How did these setbacks affect your progress or change your plan?

Describe how you felt during those moments—were you frustrated, motivated, or something else? Finally, describe what you did or wish you had done to overcome these setbacks and move forward.

4. What obstacles do you think you might face in the future, and how could you handle them?

Think ahead about potential obstacles that might get in the way of your goal. These could be things like losing motivation, running out of time, or facing unexpected problems.

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Once you've identified possible challenges, create specific "if..., then..." plans. For example, "If I start feeling unmotivated, then I'll take a short break and remind myself why this goal matters."

Please form at least three "if..., then..." plans.

5. How do you plan to monitor your progress and make adjustments along the way?

Think about how you'll keep track of your progress toward this goal. Describe the tools or reference points you plan to use in order to know if you're on track or need to make adjustments.

Also, reflect on how you'll decide what adjustments to make, at what point will you know it's time to change your approach, and how will you choose the best actions to take.

Control Condition

1. How would you plan for an ideal weekend?

Picture an ideal weekend, and describe your plan with vivid details.

Feel free to include descriptions about your activities, the people you'd spend time with, and the places you would go. Share what makes these choices meaningful to you, and how would this weekend make you feel.

2. What are your favorite activities or hobbies that bring joy to your life?

Describe these activities in detail - what do you do, and why do you enjoy doing them?

Share a memorable moment that captures why this activity is special to you, including how it made you feel and what you learned about yourself through this experience.

3. What sparks your curiosity and makes you eager to learn more?

Describe anything you are curious about.

Explain what aspects you're most curious about and how you imagine learning about them would enrich your life. Paint a picture of what exploring this interest might look like - what specific things would you want to discover, create, or understand?

4. Whom do you admire and what makes them special to you

Describe these people in detail- their characteristics, values, or achievements that inspire you. Explain why you admire them and how they have influenced your life.

If applicable, share a specific moment that made you realize their significance to you.

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5. What is your favorite spot on campus?

Describe this spot in detail- where is it and what does the environment look like? Explain what makes this spot your favorite. If applicable, share a specific memory or moment that highlights why this spot is special for you