Step by step: Sub-goals as a source of motivation ☆

Szu-chi Huang [a,*], Liyin Jin [b], Ying Zhang [c]

[a] *Stanford Graduate School of Business, Stanford University, 655 Knight Way, Stanford, CA 94305, United States*
[b] *Fudan University, The School of Management, 670 Guoshun Road, Yangpu, Shanghai, 200433, China*
[c] *Peking University, Guanghua School of Management, 5 Yiheyuan Road, Beijing 100871, China*

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ABSTRACT

The present research explores the shifting impact of sub-goals on human motivation as individuals move closer to goal attainment, and attributes this shift to the changing source of motivation at different time points during the goal pursuit. In four lab and field experiments, we employed contexts such as exercising, business reviews, and work-for-pay jobs, and performed both within-subject and between-subject tests. We found that when individuals are initiating a goal and derive motivation primarily from the belief that the final goal state is attainable, the structure of sub-goals enhances the sense of attainability and therefore leads to greater motivation. Conversely, when people are completing a goal and the source of motivation centers primarily on the perception that their actions are of value, a focus on the overall goal (rather than sub-goals) heightens the perceived value of the goal-directed actions and leads to greater motivation.

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1. Introduction

An employee at a call center who aims to make 3000 sales calls per month can frame his/her goal in two ways: as one integrated goal of 3000 sales calls or as an accumulation of smaller, more manageable sub-goals, such as thirty sub-goals of 100 calls each. Setting sub-goals thus creates an elaborated goal structure, delineating a set of successive approximations and steps toward the achievement of the overall goal (Kruglanski et al., 2002; Lewin, 1936; Murray, 1938). While some business practices emphasize the leaders' role in identifying and formalizing one overall goal for their employees (e.g., executives at Aetna Inc. set and focus on a few annual companywide goals; Pratt, 2007), other industry guidelines promote the idea of setting smaller (e.g., quarterly) sub-goals (Financial Planning, 2016; Wilson, 2016).

Structuring the pursuit of an overall goal into a set of sub-goals has been shown to reduce the difficulty of the pursuit and to provide positive reinforcements that lead to greater motivation and persistence (Brunstein, 1993; Locke & Latham, 1990; Soman & Shi, 2003). For example, the aforementioned employee at the call center might be more motivated to work on the sales goal if it is divided into thirty sub-goals because the completion of 100 calls seems more easily achievable and motivating than that of 3000 calls, which seems excessively difficult and, hence, discourages goal engagement (Locke & Latham, 1990; Pervin, 1989; Soman & Shi, 2003).

However, empirical evidence also suggests that focusing on sub-goals can conversely interfere with the pursuit of the ultimate goal (Amar, Ariely, Ayal, Cryder, & Rick, 2011; Amir & Ariely, 2008; Fishbach, Dhar, & Zhang, 2006; Newell & Simon, 1972). The achievement of sub-goals could breed a sense of self-congratulation and encourage relaxation (e.g., taking a long lunch break), thereby interfering with the progression toward and the attainment of the overall goal (Fishbach et al., 2006). Similarly, Amir and Ariely (2008) found that providing discrete progress markers such as sub-goals hindered people's performance in a spelling bee when the task was already rich in progress information.

The diverging evidence on the effectiveness of sub-goals, coupled with mixed business guidelines and principles, highlights the necessity of a closer examination of the variables that determine the motivational consequences of this elaborated goal structure, and this is precisely what we hope to achieve in the present research. In this research, we define motivation as individuals' tendencies to carry out goal-directed actions in order to reduce the discrepancy between the current state and the ideal state (Carver & Scheier, 1990). We adopt a longitudinal and dynamic view of the effects of sub-goals and aim to determine how, compared with an exclusive focus on the overall goal, such an elaborated intermediate goal structure influences motivation over the course of a pursuit.

Drawing from the literature on the various sources of human motivation (Liberman & Förster, 2008; Locke & Latham, 1990) and the temporal variation of their impacts (Huang, Zhang, & Broniarczyk, 2012; Louro, Pieters, & Zeelenberg, 2007), we propose the following hypothesis: Because individuals derive motivation to persist on a goal from different sources as they progress toward the end point (Liberman & Förster, 2008; Louro et al., 2007), framing the goal as one integrated goal versus an accumulation of sub-goals may have a distinct influence on motivation at different times.

Specifically, we build on the influential value-expectancy models (Atkinson, 1957; Vroom, 1964) and propose that these two pillars of motivation have an interesting temporal aspect to them: When people have accumulated only a low level of progress on the goal and remain doubtful about the goal's attainability, the information that signals the goal's attainability should be the primary determinant of their motivation (Zhang & Huang, 2010). For example, researchers have recently found that having more variety within a set of means to goal attainment increases motivation in the initial stage of the pursuit by reducing the uncertainty associated with goal attainment (Etkin & Ratner, 2012). Because a sub-goal structure fosters the sense of goal attainability (i.e., easier goal attainment) more than the structure that has only one overall goal, we thus argue that a focus on the sub-goal should elicit greater motivation when people first begin the pursuit, because in this early stage the source of motivation lies critically in the belief of a goal's attainability.

However, when people move into the advanced stages of the pursuit, the high level of progress they have accumulated should alleviate the concern on whether the goal is attainable (Liberman & Förster, 2008). At this stage, people instead focus on the reduction of the discrepancy between their current position and the goal (Koo & Fishbach, 2008). Their commitment to the goal and subsequent motivation therefore depend primarily on the extent to which they value the goal (Koo & Fishbach, 2012). Importantly, because a focus on the overall goal (instead of the next sub-goal) allows individuals to see their actions as directly linked to the valuable outcome, we propose that focusing on the overall goal would elicit greater motivation when people's concern centers on value. Overall, depending on whether people derive motivation from the perception of easy goal attainment or from the sense that their actions are associated with a valuable outcome, the motivational consequences of a sub-goal structure would change as people progress further in their pursuits.

This conceptualization reconciles conflicting findings in the sub-goal literature by identifying the conditions under which sub-goals' momentary impact on motivation shifts as individuals move from the beginning of the pursuit to goal completion. Our critical contribution lies in the finding that the motivational consequences of a sub-goal structure rely heavily on individuals' shifting concerns about the pursuit and in the delineation of how the structure of sub-goals (vs. having only the overall goal) addresses these concerns. Our findings suggest that a general statement on the effectiveness of sub-goals may be an oversimplification; organizations and employers who wish to implement a sub-goal structure to motivate employees, sales teams, or consumers should hence be mindful of this shifting impact.

2. The advantages and disadvantages of sub-goals

The literature defines sub-goals as pre-established smaller steps toward the achievement of an overarching goal (Borrelli & Mermelstein, 1994; Heath, Larrick, & Wu, 1999; Lewin, 1936). Because sub-goals are successive approximations toward an overall goal (Murray, 1938), they are not ends in themselves. Instead, they exist only because of primary goals (Kruglanski et al., 2002).

The use of sub-goals is associated with many benefits. Because sub-goals are subordinate end points in the pursuit of an overall goal, they help to signify progress toward the ultimate end goal, especially when the overall progress is uncertain (Amir & Ariely, 2008). In addition, sub-goals are easier and quicker to accomplish than the overall goal, reducing the difficulty and complexity of the pursuit and providing a greater sense of progress (Brunstein, 1993; Locke & Latham, 1990; Newell & Simon, 1972; Pervin, 1989; Soman & Shi, 2003). As a result, the employment of sub-goals can help solve the "starting problem" that arises when one confronts a difficult goal (Heath et al., 1999). The achievement of sub-goals can enhance self-efficacy and competence, leading to greater persistence and motivation (Bandura & Schunk, 1981; Stock & Cervone, 1990). In the context of debt settlement, Gal and McShane (2012) found that as individuals paid off more debt accounts (i.e., the more financial sub-goals they accomplished), their subsequent effort in eliminating their overall debt increased (see also Kettle, Trudel, Blanchard, & Häubl, 2016). The actual dollar amount that was paid off did not have such a motivational effect.

On the other hand, there are also costs associated with setting and accomplishing sub-goals. Because sub-goals represent additional intermediate levels that individuals must work toward, they may lead to motivational distraction and interfere with the ultimate goal (Heath et al., 1999; Kruglanski et al., 2002; Newell & Simon, 1972). Sub-goals often replace the overarching goal as the center of reference (Heath et al., 1999), and the sense of accomplishment from completing individual sub-goals can cause complacency, leading to lower motivation to continue working on the overall goal. For instance, Fishbach et al. (2006) showed that when people considered their success on a subgoal, they would view additional actions toward achieving the superordinate goal as substitutes and thus were less likely to pursue these actions.

These conflicting findings suggest that sub-goals may not have either a universally positive or negative impact on motivation, and the effectiveness of sub-goals calls for closer examination. While various factors could change the impact of sub-goals (e.g., trait procrastination, sub-goal alignment, expertise in goal pursuit), we are particularly interested in the level of progress on the goal as the focal point of investigation for the following three reasons: First, goal pursuit is a dynamic process that spans from initiation to completion, and situations change from moment to moment during this process. For this reason, a longitudinal perspective reveals much more information than the usual snapshot-like approach, as it accounts for the influence of time/stage. Second, prior research has documented that individuals actively monitor their progress (Carver & Scheier, 1998) and adjust efforts accordingly (Kivetz, Urminsky, & Zheng, 2006; Nunes & Drèze, 2006). However, what these findings did not address is how individuals' relative position on a goal changes not only the amount of effort they invest, but also the source of their effort and thus the way they interpret goal-directed behaviors (Koo & Fishbach, 2012), both of which determine the impact of the presence of a sub-goal structure. Third, in organizational settings, the goal structure often remains static throughout the pursuit; for instance, once a sub-goal structure is employed in a sales context, it would continue to be used throughout the fiscal year. It is thus especially important to explore the dynamic impact of sub-goal structure across different stages of goal pursuit to derive a goal structure and feedback system that maximizes individuals' effort and performance.

3. Sub-goals as the source of motivation

On the conceptual level, goals function as reference points (Bonezzi, Brendl, & De Angelis, 2011; Heath et al., 1999) and motivate people by creating a negative discrepancy between a person's