Subgoals Boost Productivity Even When Goal Progress Is Observable: A Field Experiment

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Abstract

- Lab studies suggest that when goal progress is observable, subgoals backfire by encouraging complacency and distracting from distal goals
- We theorize that by increasing self-efficacy, reducing procrastination, and making large goals less daunting, subgoals can boost performance over the long-run even when goal progress is observable
- We present evidence from a large, pre-registered, longitudinal field experiment that supports this prediction

Introduction

- When working towards a long-term goal, an intuitive strategy is to break it down into a series of smaller subgoals
- However, research on subgoals has yielded mixed results
- Although subgoals can sometimes boost productivity and achievement, brief lab studies suggest that when progress feedback is observable, subgoals harm performance by fostering complacency[1,2,3,4]
- We test the hypothesis that over ecologically valid time spans, subgoals can improve productivity even when goal progress is observable

Field Experiment Context

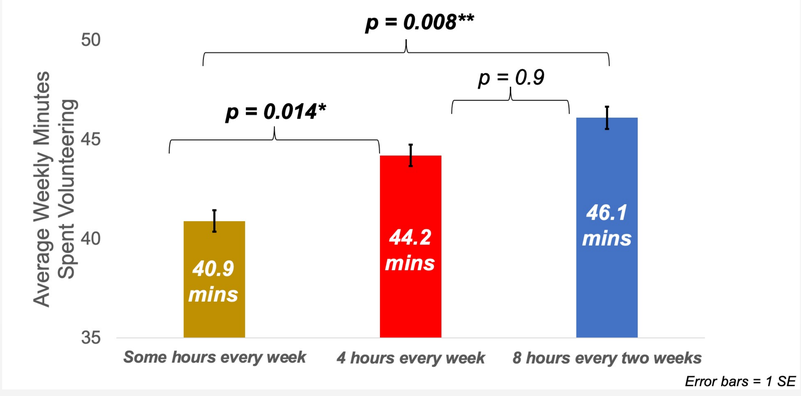
- Sample: *N* = 9,108 volunteers for Crisis Text Line (CTL)
- All volunteers committed to a 200-hour volunteering goal
- Goal progress salient and visible via dashboard upon logging in
  - Previous research would suggest subgoals should backfire here

Methods

- **Intervention:** 6 emails sent biweekly over a 12-week period with different goal framings based on condition
- **Post-Intervention:** 12 weeks immediately following intervention period; no more emails sent (used to assess durability)
- **Independent variable:** Volunteers asked to reach 200-hour goal by doing:
  - "some hours every week" (control)
  - "4 hours every week" (inflexible subgoal)
  - "8 hours every two weeks" (flexible subgoal)
- **Dependent variable:** Number of minutes spent each week on online volunteering platform (direct, objective measure of productivity)

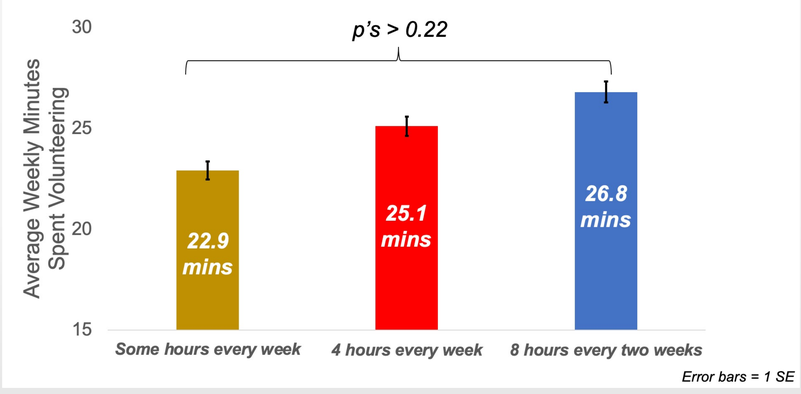
Results: Intervention Period

Volunteering Rates During the 12-Week Intervention



Results: Post-Intervention

Volunteering Rates After the 12-Week Intervention



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Robustness & Heterogeneity

- Robustness checks yield consistent results
  - DV = binary measure of volunteering (OLS & logistic regression)
  - DV = two weeks of data at a time (align with cadence of emails)
  - DV = total minutes volunteered during intervention or post-intervention period
- No variation by participant gender, tenure at the organization, or prior volunteering levels
  - Significant variation based on age
  - 40–49-year-olds (*n* = 606) volunteered 68% more when assigned to *8 hours every two weeks* condition vs. *control* ($p = 0.0008$) and 50% more vs. *4 hours every week* ($p = 0.002$)

Conclusion

- Subgoals can improve performance over time even when goal progress is readily observable
- Future work should dig into the underlying mechanisms: we posit that subgoals boost self-efficacy, reduce procrastination, and make large goals less daunting
- This is a costless, light-touch nudge with substantial benefits

References

1. Latham, G. P., & Brown, T. C. (2006). The effect of learning vs. outcome goals on self-efficacy, satisfaction and performance in an MBA program. *Applied Psychology, 55(4), 606-623.*
2. Stock, J., & Cervone, D. (1990). Proximal goal-setting and self-regulatory processes. *Cognitive Therapy and Research, 14(5), 483-498.*
3. Latham, G. P., & Seijts, G. H. (1999). The effects of proximal and distal goals on performance on a moderately complex task. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 20(4), 421-429.*
4. Amir, O., & Ariely, D. (2008). Resting on laurels: the effects of discrete progress markers as subgoals on task performance and preferences. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 34(5), 1158.*