2014 Russell Ackoff Doctoral Student Fellowship Proposal

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The Effects of Task Categorization and Temporal Focus on Productivity[1]

Research Questions

Think about John who works in an American Red Cross call center and whose main job responsibility is to solicit blood donation by calling current donors on the registry. John has to make a large number of phone calls at a fast pace on a daily basis, and he may encounter intense interactions with potential donors who are not very receptive to the solicitation. As a result, though John may perceive this job as meaningful, he is likely to feel exhausted over time and his motivation may decrease. John is just one example of thousands of employees who encounter a large volume of routine tasks every day (e.g., data entry clerks, postal workers, assembly line workers) and experience exhaustion and lowered motivation over time. How can we help employees maintain their motivation and productivity when faced with repetitive tasks?

In this project, I examine (a) whether categorizing repetitive tasks into groups can affect employees' motivation and productivity and (b) how the effects of categorization depend on the temporal focus[2] employees adopt when reviewing their tasks. In John's case, a list of phone calls can either be grouped into different categories based on donors' shared attributes (e.g., blood type, geographic location) or be treated as one group such that each phone call is not distinct from the other. Also, at the outset of a work shift, John's temporal focus can either be oriented to his performance on the previous shift (e.g., the list of phone calls he made; *retrospective focus*) or be directed to his tasks for the current shift (e.g., the list of phone calls to be made; *prospective focus*).

Hypotheses

I propose that the effects of categorization on work motivation depend on temporal focus (i.e., whether employees are prompted to *prospectively* contemplate tasks that they will undertake or *retrospectively* review tasks they completed before).

When employees *prospectively* focus on tasks that they need to do on a work shift, a long to-do list (e.g., calling 300 donors today) may seem repetitive and daunting. However, when the same long to-do list is unpacked into a few categories (e.g., calling 99 donors in New York, 51 donors in Massachusetts, 150 donors in Pennsylvania), employees may perceive the tasks as having more variety (Redden, 2008; Mogilner et al., 2008) and being less time consuming (Kruger & Evans, 2004). These perceptions can further boost work motivation (Hackman & Oldham, 1976). Therefore, I expect that when employees *prospectively* anticipate what they will be doing all day long, they will be more motivated if their repetitive tasks are categorized into groups than if the same tasks are not categorized.

However, when employees at the outset of a shift are provided with their task completion status on the previous shift, task categorization may decrease motivation compared with no categorization. As explained above, the same set of tasks seems to be shorter when categorized into groups than when they are not categorized. However, people tend to feel more productive when they think they completed a greater number of tasks and had a fuller day (Etkin & Mogilner, 2014), and the sense of achievement is associated with motivation (Herzberg, 1968). Connecting these arguments, I expect that when employees review their process in the past, they will be less motivated if their tasks are categorized into groups of small numbers.

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[1] This project will be part of my dissertation work.

[2] Temporal focus in the past research is broadly defined as "the extent to which people devote their attention to the past, present, and future" (Shipp et al., 2009, p. 4).

Method

Outbound call centers (where employees solicit business or donations for charity organizations, alumni associations, or private companies) provide an excellent context for studying the effects of task categorization and temporal focus on productivity, as employees in these settings undertake repetitive tasks with pre-determined scripts and often burn out and quit after only a few months (Cable et al., 2012). I am in the process of looking for a corporate work setting to conduct **a longitudinal field experiment**. I plan to repeatedly manipulate temporal focus and task categorization **at the beginning of workdays**.

Experimental Manipulations on Two Factors:

Temporal Focus	• *Retrospective focus*: Employees are presented with a summary of their performance on the previous shift (e.g., the list of phone calls they made and their conversion rate). • *Prospective focus*: Employees are presented with a summary of what they are expected to achieve on the current shift (e.g., the list of phone calls they should make and their target conversion rate)
Task Categorization	• *Categorization*: The list of phone calls will be categorized into groups based on meaningful attributes (to be determined through discussions with the corporate partner) • *No categorization*: The list of phone calls will not be classified into groups.

Tentative Timeline:

Month 1: Collect baseline data for all employees in the experiment, including demographics, daily performance (e.g., the number of calls made, conversion rate), and supervisor ratings of job performance.
Month 2: Employees will be randomly assigned to one of the five conditions: 2 (temporal focus: retrospective vs. prospective) X 2 (task categorization: yes vs. no) plus a control condition where employees are not subject to any interventions. The interventions will last one month, and performance will be tracked for each employee at every shift. Supervisor ratings will be collected again at the end of Month 2.
Month 3: Collect post-intervention data, including daily performance and supervisor ratings.

Additional Variables:

Individual differences measures: Variety-seeking preferences, productivity orientation, and big-five personality traits will be collected at the beginning of Month 1.
Job attitude measures: Job satisfaction, emotional exhaustion, and work engagement ratings will be collected multiple times during the study period.
Turnover: Whether or not an employee remains with the company will be tracked for six months post-study.

With such a longitudinal study design, I will be able to investigate how the effects of task categorization and temporal focus evolve over time. For example, it will be valuable to explore the time it takes for the interventions to influence job attitude and productivity, as well as how long the effects persist.

In addition to a field experiment, I plan to conduct **a study on Amazon's Mechanical Turk**. Specifically, 500 participants will engage in repetitive tasks (e.g., transcribing survey responses, proofreading texts) one hour[3] a day for four days. At the beginning of Days 2 and 3, I will manipulate temporal focus and task categorization. Participants' performance, attrition rates, and "job" satisfaction will be tracked.

Advisor: Professor Katherine L. Milkman

[3] Ideally, I would like to have participants work eight hours per day on my study, which will be very costly to implement.

Reasons for Seeking Funding

I anticipate my research questions to draw significant interest in the service industry. Upon finding a corporate partner, I plan to visit them to facilitate our collaboration. Also, this topic is relevant to a broad audience including psychologists, economists, and organizational behavior researchers. I hope to present this work at two conferences. The Russell Ackoff Fellowship will be used to support conference attendances, company visits, and experimental expenses. I appreciate your consideration of my proposal and welcome any questions related to the currently proposed research.

Budget Description

Items	Estimated Cost	Note
Experimental Expenses	$(7500+500)*0.25 = $2,000	Five-hundred Mturk participants will be paid $15 for a four-day study, and top 10% performers will receive a prize (roughly $500 in total). 75% of the expenses will be covered by Wharton Behavioral Lab.
Company Visit	$600	• Roundtrip flights: $400 • Accommodation: $200
2015 Academy of Management Annual Meeting (Vancouver, BC)	$800	• Roundtrip flights: $400 • Accommodation (three nights): $400
2015 Society of Judgment and Decision Making Annual Meeting (Chicago, IL)	$600	• Roundtrip flights: $300 • Accommodation (three nights): $300
Total	**$4,000**	

Any incurred expenses that the Russell Ackoff Doctoral Student Fellowship does not cover will be paid out-of-pocket or by travel funding provided by the Operations and Information Management Department ($800 per student per year).