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14. ABSTRACT

An experimental study investigated the effects of dispositional goal orientation, task difficulty, and accountability manipulations (outcome, process, none) on situational goal orientation and task performance. Accountability and task complexity was manipulated using a 3 X 2 experimental design. Subjects completed measures of dispositional goal orientation, and initial task self-efficacy. Subjects then were exposed to an accountability manipulation, designed to frame the subjects' situational goal orientation. Subjects then performed a computerized managerial decision-making task. Task performance was captured electronically and tracked across each decision-making trial to determine rates of learning. Task self-efficacy was measured following pre-determined trials of the experiment and following completion of all decision-making trials. As expected, subjects in process and outcome accountability conditions reported higher levels of task specific (situational) learning orientation. The outcome accountability manipulation also resulted in a higher situational performance orientation. Accountability was also found to affect performance, especially when persons are in the early stages of performing a complex task.

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learning orientation, self-efficacy, training, accountability

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FINAL TECHNICAL REPORT

GRANT #: N00014-01-1-0917

PRINCIPAL INVESTIGATOR: Dr. Walter D. Davis (e-mail:wdavis@bus.olemiss.edu)

INSTITUTION: University of Mississippi

GRANT TITLE: Dispositional vs. Situational Goal Orientation: Effects on Self-efficacy and Performance.

AWARD PERIOD: 1 July 2001 – 30 Sep 2002

OBJECTIVE: An experimental study investigated the effects of individuals' dispositional goal orientation (performance and learning) on reactions to and performance in task environments that differ in complexity and accountability.

APPROACH: An experimental study investigated the effects of dispositional goal orientation, task difficulty, and accountability manipulations (outcome, process, none) on situational goal orientation and task performance. Accountability and task complexity was manipulated using a 3 X 2 experimental design. Subjects (151 students recruited from undergraduate management classes) were randomly assigned to experimental conditions. They then completed measures of dispositional goal orientation (VandeWalle et al., 1997), and initial task self-efficacy (Bandura, 1977; 1986). Subjects then were exposed to an accountability manipulation, designed to frame the subjects' situational goal orientation. Subjects then performed a computerized managerial decision-making task. This task was reprogrammed to provide the varying levels of task complexity described above. Task performance was captured electronically and tracked across each decision-making trial to determine rates of learning. Task self-efficacy was measured following pre-determined trials of the experiment and following completion of all decision-making trials.

ACCOMPLISHMENTS: Accomplishments throughout the award period are as follows:

1. *Comprehensive literature search.* A graduate research assistant, under the direction of the principal investigator, conducted a background survey of goal orientation, self-regulation, and accountability literature, with a special emphasis on research published within the last year. This literature was useful in updating the design and administration of the current study.

2. *Development of a complex decision making task, accountability manipulations, and task complexity.* Professor Walter D. Davis, the principal investigator, and Professor Mero developed the experimental task and experimental manipulations. After evaluating several different computerized decision making tasks, we concluded that the *TANDOM* tactical decision making task was most appropriate for our purposes. This task requires subjects to evaluate a variety of information components in order to determine whether or not a simulated radar signal indicates a friendly or hostile aircraft, surface ship, or submarine, and whether or not this vessel is friendly or hostile. Finally, the subject must make a decision to either 'clear' or 'shoot' the vessel. This task can be reprogrammed in order to manipulate: (a) task complexity, (b) feedback availability, and (c) information clarity.

3. *Determination of Research Design.* As noted in an earlier report, we carefully considered the inclusion of Accountability as a factor in our research design. From a theoretical standpoint, we concluded that Accountability is likely to affect Situational Goal Orientation. Therefore, we decided to manipulate Accountability and then measure this manipulation's effect on Situational Goal Orientation. Furthermore, we decided to manipulate information clarity, which is the extent to which various pieces of information provided to subjects during the manipulation are accurate,

ambiguous, or conflicting. Information clarity represents the extent to which the task is simple (perfect information) or complex (imperfect, ambiguous information).

4. *Pilot testing of decision task in experimental lab.* We successfully installed the decision task on computers in the experimental lab. Furthermore, automated performance data collection procedures were tested and refined.

5. *Survey Construction.* Surveys for administration at the beginning and end of the experiment were developed. The first survey included measures of goal orientation, the NEO Five Factor Inventory (Big Five), self-esteem, and demographic measures. The second, third, and fourth surveys included measures of task satisfaction, task interest, task self-efficacy, and situational goal orientation. The second, third, and fourth surveys were administered at various times before, during, and after subjects performed the decision task.

6. *Development of standard lab procedures.* In order to ensure a controlled experimental setting, it was necessary to establish a standard procedure for conducting the actual data collection. Procedures were established for: (1) initial set-up of the computers, (2) preliminary introduction of participants to the lab study, (3) administration of the pre-experiment survey, (4) instructing the participants on how to perform the decision-making task, (5) administering the post-experiment survey.

7. *Preparation of lab.* All necessary lab materials were assembled and organized. These materials include: pre-experiment surveys, post-experiment surveys, consent forms, printed task instructions, computer set-up instructions, lab procedure instructions, and subject sign-in and tracking forms.

8. *Training of Ph.D. students.* Two doctoral students were trained in the aforementioned lab procedures. These two students served as lab assistants and played an increasingly active role in data collection. Both students performed well and often demonstrated a high level of initiative and independent discretion.

9. *Data Collection.* We successfully collected data from 151 subjects. This includes survey data and automated task performance data.

10. *Data Management.* A database structure for both the survey and computerized data were set up. Data were entered for all 151 subjects of our study.

11. *Preliminary Data Analysis.* Preliminary data analysis included scale construction, reliability analysis, and correlation analysis. Comprehensive data analysis began upon completion of data collection.

12. *Comprehensive Data Analysis.* Data analysis began in September, 2002 and continues up to this date. Results of initial data analysis are presented below in the CONCLUSIONS section.

CONCLUSIONS: The most significant results of the experiment pertain to the relationships between accountability manipulations, task specific (situational) goal orientation, task difficulty, and performance. As expected, subjects in process and outcome accountability conditions reported higher levels of task specific (situational) learning orientation. The outcome accountability manipulation also resulted in a higher situational performance orientation. Accountability was also found to affect performance, especially when persons are in the early stages of performing a complex task. Subjects in the high task complexity, outcome accountability condition performed better in the first performance trial than did other subjects in the high task complexity condition who were only subjected to the process accountability manipulation, or those subjects not subjected to any accountability manipulation.

An interesting, and unexpected finding of our research was that those subjects in the low task difficulty condition demonstrated significant performance improvement over time, but subjects in the high task difficulty condition demonstrated significant performance decrements over time. Future analysis will explore this finding to determine causal explanations.

SIGNIFICANCE: The results of this research contribute to the research objectives outlined in NPRST's *Sailor 21* (1998). Specifically, the findings of this research have implications for the selection and classification of personnel and contribute to the Navy's efforts to create a "rich 'whole person' profile to match people along a multitude of dimensions into the 'best fitting' Navy job available" (p. 21). Outcomes of this matching process should include better performance, job satisfaction, and retention. An understanding of the relationship between goal orientation and these outcomes in various task environments is important because many Navy personnel "will be required to perform a broader range of tasks.... and will operate more independently with fewer coworkers and a truncated chain of command" (p.24). Such personnel "will operate in very complex information-intensive environments", and "make substantially more independent decisions" (p.24). Thus, job assignments in the Navy are likely to vary in task complexity and accountability. Complex tasks and tasks for which subjects are not adequately held accountable may result in lower levels of learning orientation, and lower levels of performance.

MANUSCRIPTS UNDER PREPARATION:

A manuscript entitled "Goal orientation, Accountability, and Task Complexity: Affects on performance, satisfaction, and self-efficacy" is under preparation for submission to *The Academy of Management 2003 Annual Meetings* or *The Southern Management Association 2003 Annual Meetings*. Following submission to a conference, the paper will be submitted for publication in a high quality management journal such as *Personnel Psychology* or *Journal of Applied Psychology*.