WHEN THE TIME IS RIGHT: HOW THE TIMING OF FORMAL INTERVENTIONS AFFECTS GROUP PROCESS AND DECISIONS

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ABSTRACT

In two laboratory experiments, I tested the extent to which decision-making groups alter processes in response to interventions received at various times during their first task as a team. In Study 1, groups that received interventions during early stages of their discussions shared more information than groups that received interventions before beginning discussions, which influenced decision quality indirectly. In Study 2, I compared early, in-process interventions to interventions received at the temporal midpoint of the first task, finding that groups receiving interventions at the temporal midpoint of their first task improved initial processes and outcomes, and groups receiving earlier interventions did not.

INTRODUCTION

In contemporary organizations, groups rarely enjoy the benefit of stable membership (O'Leary, Mortensen, & Woolley, 2011; Valentine & Edmondson, 2014), and new teams perform many crucial organizational tasks. Unfortunately, new teams seldom hit the ground running; most initially adopt suboptimum strategies such that early work is inferior to later work (Akgün & Lynn, 2002; Rand, 1998). Thus, helping leaders and team members create and leverage opportunities to develop and adopt appropriate strategies quickly is critical.

One way to help groups overcome initial struggles quickly is through formal intervention (Morgeson, 2005; Morgeson & DeRue, 2006; Okhuysen & Eisenhardt, 2002). Although scholars have explored the content of effort to improve group processes (Argyris, 1982; Mathieu & Rapp, 2009; Schein, 1987; Schwarz, 2002), less attention has been paid to the role of timing when leveraging and creating such opportunities (Hackman & Wageman, 2005; Weingart, 1992; Woolley, 1998). I investigate how the timing of formal interventions influences a group's capacity to improve initial strategies.

Over time, group members alter the way they communicate and coordinate activities (Gersick, 1988; Ilgen et al., 2005), and two major approaches describe how group process changes predictably. First, many scholars posit that groups progress through several stages of development (Bales & Strodtbeck, 1951; Chang, Bordia, & Duck, 2003) and that groups increasingly focus on task work as they become more temporally distant from their beginnings, and a group's performance strategy develops and changes gradually throughout its work. Other theorists reject the notion that groups pass through predictable stages during development. Instead, deadline-driven, task-performing groups establish norms (Bettenhausen & Murnighan, 1985; 1991) and work processes quickly in their earliest formative moments (Eriksen & Dyer, 2004; Gersick & Hackman, 1990). Groups increasingly resist altering these work processes (Ancona & Chong, 1999; Zellmer-Bruhn, Waller, & Ancona, 2004) until the temporal midpoint between the beginning and a deadline, at which point the group becomes more aware of

temporal constraints, sparking rapid change that endures until the end of the task (Knight, 2014; Okhuysen & Waller, 2002). These models imply group performance strategies emerge rapidly at the beginning of a task, and are static for long periods.

Timing and Formal Interventions

Formal interventions are important triggers of transitions, beyond those sparked by deadlines and awareness of clock time (Okhuysen, 2001; Okhuysen & Eisenhardt, 2002). The effect of an in-process intervention depends on the state of group process at the time of the interruption (Morgeson & DeRue, 2006). To explain this phenomenon, Hackman and Wageman (2005) theorize that a team's readiness for an intervention varies over time, and they define readiness as: "(1) the degree to which the issues to be addressed are among those naturally on team members' minds at the time of the intervention, coupled with (2) the degree to which the team as a whole is not at that time preoccupied with more pressing or compelling matters" (p. 275).

To clarify why and how intervention early in a group's existence is important, I distinguish pre-task from in-progress interventions and argue they influence group processes variously. Before the task begins, members focus on understanding task demands, individual roles, and member appraisal (Kozlowski & Bell, 2008). Group members might be anxious about interacting with new people or participating in a new task. Since groups possess a great deal of cognitive load during initial stages, they experience difficulty remembering and integrating strategic advice offered before a task begins (Gellatly & Meyer, 1992). Since groups are naturally hesitant to engage in strategy discussions (Mathieu & Rapp, 2009) and are concerned with other matters, groups are less ready for interventions regarding their performance strategies pre-task in comparison to in-process.

In contrast, in-process interventions disrupt existing processes and create a switch of attention that might lead to productive changes (Okhuysen & Eisenhardt, 2002). The more collective experiences a group has, the more data it possesses regarding its task strategies and what aspects of strategy are relevant. Since groups are less ready for strategic advice pre-task, and since in-process interventions both disrupt suboptimum patterns and offer members more experience with teamwork and task work (Marks et al., 2001), I predict:

Hypothesis 1a: Intervening after a group begins work leads to more effective group processes than intervening before it begins work.

Hypothesis 1b: Intervening after a group begins work leads to more effective group outcomes than intervening before it begins work.

Temporal Distance and Group Readiness

Although the beginning of group discussion represents readiness for intervention changes, the two primary theories of group development—punctuated equilibrium and linear stage models—lead to competing predictions about how time, elapsing during an initial task, influences intervention readiness. Punctuated theories suggest groups are uniquely receptive to change at the very beginning, but quickly develop resistance to change until the temporal midpoint. Linear stage models suggest temporal distance from the beginning makes groups more receptive to change since they are better able to focus on the task and the beginning is further in the past.

Hypothesis 2: Intervening at the very beginning of interaction leads to more effective group processes and outcomes than intervening later during a group's work.
Hypothesis 3: Intervening later during group interactions leads to more effective group processes and outcomes than intervening at the very beginning.

STUDY 1

Method

To test the hypotheses, I conducted an experiment in which sixty three-person groups made two decisions, using hidden-profile decision-making tasks (Stasser & Titus, 1985; Wittenbaum, Hollingshead, & Botero, 2004). Groups were assigned randomly to one of three intervention timings: a) just before the task started (i.e., pre-task), b) during the first few seconds of a group performing the task (i.e., minimal interaction), and c) five minutes into the first task (i.e., early stages).

Videos of group discussions were coded for the degree to which groups pooled unshared information. Decision quality was coded as either correct (1) or incorrect (0). Pre-discussion preferences were measured as the number of members who preferred the correct answer before discussion.

Following recommendations from Ballinger (2004), I used generalized estimating equations (GEEs) to test the effects of interventions on information pooling and outcomes.

Results

Hypothesis 1a was supported, $\chi^2(1) = 4.84$, $p = .01$. Groups receiving interventions before beginning discussions pooled an average of 12.40 pieces of unshared information ($SE = .86$), and groups receiving in-process interventions pooled 14.83 ($SE = .69$).

Hypothesis 1b was not supported by GEE analyses, ($\chi^2(1) = 1.36$, $p = .12$).

Hypothesis 2 and Hypothesis 3 are competing hypotheses regarding the effects of temporal proximity to the beginning of interaction. The timing of intervention influenced the amount of unshared information pooled ($\chi^2(2) = 7.26$, $p = .03$); groups receiving later interventions shared more information ($M = 15.42$, $SE = .76$) than those given interventions before the task ($M = 12.40$, $SE = .89$, $p = .007$). In contrast, groups receiving interventions after minimal interaction did not pool different amounts of information than groups in either of the two other conditions ($M = 14.23$, $SE = 1.10$, $p > .20$). This lends further, though mixed, support for Hypothesis 3.

Discussion

These results suggest that the timing of an intervention influences its impact. Specifically, pre-task interventions were less effective than in-process interventions at stimulating information pooling, which indirectly led to worse group decisions. Later in-process interventions showed stronger differences with pre-task interventions than earlier in-process interventions, suggesting new groups become progressively more ready for formal intervention as time elapses.

STUDY 2

An important implication of Study 1 is that groups become more ready for formal intervention as they accrue collective experience. Although the study suggests groups are more receptive to early, in-process intervention, it does not compare the impact of interventions at a key moment predicted by punctuated equilibrium theorists—the temporal midpoint. According to Gersick's (1989) model, group awareness of and attention to time are heightened at the temporal midpoint, leading groups to reflect and alter work processes both suddenly and radically.

Hypothesis 4a. Intervening at the temporal midpoint of a group task leads to more effective group processes than intervening at earlier times.

Hypothesis 4b. Intervening at the temporal midpoint of a group task leads to more effective group outcomes than intervening at earlier times.

Method

To test the hypotheses, this experiment used a 2x2 factorial design, crossing the timing of interventions (i.e., earlier versus midpoint) with intervention style (i.e., directive versus participative), including a control condition with no intervention. The effects of intervention style are not discussed here. One-hundred five three-person groups completed the same tasks described in Study 1. Forty-one groups received interventions during the early stages of interaction, thirty-six groups received interventions at the midpoint, and twenty-eight groups were assigned to a control condition and did not receive intervention.

The same procedure from Study 1 was followed, with a few exceptions. The intervention addressed both preference negotiation and information pooling, and each task lasted 30 minutes.. An experimenter who was blind to the hypotheses intervened either five minutes (i.e., early condition) or fifteen minutes (i.e., midpoint condition) after groups began discussions..

Results

Hypothesis 4a suggests interventions received at the temporal midpoint of the first task produce greater process changes than in-process interventions at earlier stages. This hypothesis was tested in two GEEs with unshared information pooling and preference negotiation as dependent variables, and timing of intervention as a predictor and initial preferences as a control. These analyses suggest all interventions improved information pooling, relative to control ($\chi^2(2) = 30.16$, $p < .001$). Groups receiving midpoint interventions pooled about the same amount of information ($M = 19.81$, $SE = .61$) as groups receiving early interventions ($M = 19.60$, $SE = .60$, $p = .80$). Both experimental conditions pooled more unshared information than control groups ($M = 13.90$, $SE = 1.00$, $p < .001$). Thus, Hypothsis 4a was not supported.

Hypothesis 4b suggests the timing of intervention influences quality of group decisions. I conducted a repeated-measures, logistic regression using GEEs as in Study 1. Overall, intervention timing influenced group decision quality ($\chi^2(2) = 8.13$, $p = .02$). Planned comparisons showed that groups receiving midpoint interventions ($M = .78$, $SE = .06$) made marginally better decisions than groups receiving early interventions ($M = .67$, $SE = .07$, $p = .07$), and better decisions than control groups ($M = .49$, $SE = .10$, $p = .002$). Groups receiving

early interventions also made better decisions than control groups (p = .04). This pattern of results provides marginal support for Hypothesis 4b.

GENERAL DISCUSSION

As scholars of group process turn their attention to temporality, questions about improving group performance shift from "what" to "when." The key finding of these two studies is that timing is a determinant of intervention success, one that should be integrated into future scholarship on formal intervention, group development, and group decision-making. In Study 1, the difference between the first and last intervention was only five minutes, but this was sufficient to produce disparities in information pooling. In Study 2, groups were more receptive to intervention at the temporal midpoint than during earlier times, though the advantage was present only for performance of the first task.

Overall, these studies provide an initial look into how the timing of an intervention shapes its effectiveness, based on changing group readiness for intervention. Although this study suggests timing is paramount, many questions remain unanswered. Why and how does group readiness change over time? To what extent does the task or period matter? How do ongoing groups in organizations, who might have multiple or contradictory secondary agendas, respond to formal interventions over time? By examining these questions, both scholars and practitioners gain better understanding of the role of timing in both group processes and outcomes.

REFERENCES AVAILABLE FROM THE AUTHOR